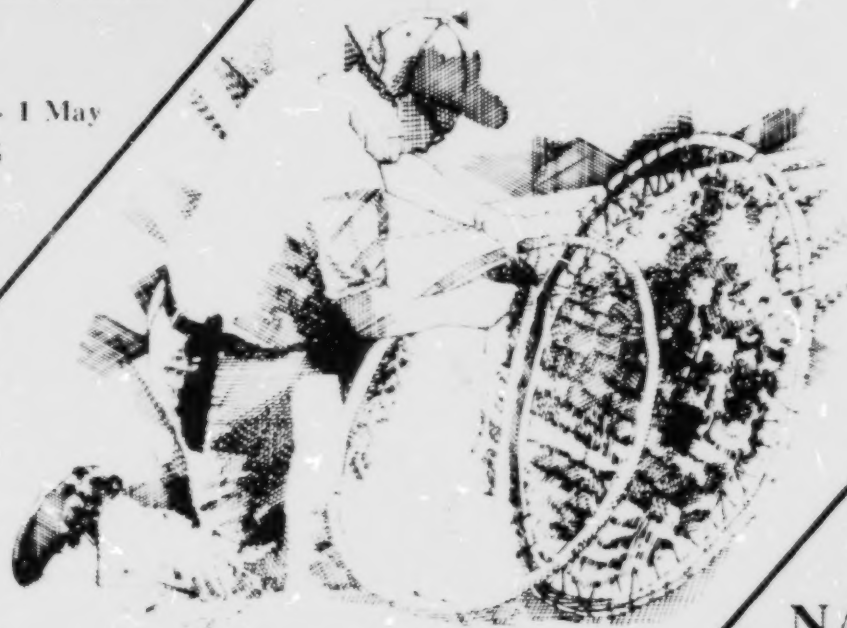




The 1986 Symposium of the
Alberta Society
of Professional Biologists

Co-sponsored by
Alberta Native Affairs
and
Indian and Northern
Affairs Canada

29 April - 1 May
1986



**NATIVE
PEOPLE
AND
RENEWABLE
RESOURCE
MANAGEMENT**

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Westin Hotel
Edmonton, Alberta
29 April - 1 May 1986

Copies of this document are available at \$18.00 from:

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Dr. Stuart Smith: Program

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The Society is grateful to Mr. Don Dabbs, Ms. Nicola Ross and Mr. Glen Semenchuk for chairing the three consecutive day sessions of the Symposium, Dr. Alan Birdsall for acting as Panel Facilitator, and Mr. Gary Ash for organizing the poster paper session.

The Alberta Society of Professional Biologists wishes to express sincere appreciation to Alberta Native Affairs and Indian and Northern Affairs Canada for their generous co-sponsorship of the 1986 Symposium

The Society would also like to acknowledge the Alberta Government and the City of Edmonton for their financial and logistical support of the Barbeque at Fort Edmonton Park.

The Alberta Society of Professional Biologists expresses its gratitude to the following corporations for donations made to the Society during 1985-86. These donations have allowed the Society to extend its activities and services to its members in a manner which would not be possible without such support.

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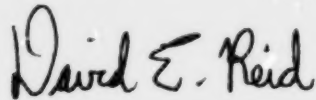
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MESSAGE FROM THE PRESIDENT

This is the Tenth Annual Symposium sponsored by the Alberta Society of Professional Biologists. A greater degree of self government has or will soon become a reality for many native groups. Along with this change, will come the responsibility to manage renewable resources, upon which many native cultures depend. Many questions and concerns have been raised in relation to this issue. How will the cultural, social and welfare of native people be affected by renewable resource management of wildlife, forestry and water resources? How will current methods of renewable resource management be affected? Government, anthropologists and biologists have presented their views of these issues. In addition, the panel discussion has addressed the very controversial issue of animal rights and resource economics.

We hope that the participants found the Symposium well balanced and interesting in its topics, viewpoints and structure. The 1986 Symposium committee of the Alberta Society of Professional Biologists wishes to express its sincere thanks to the speakers and participants for their support, as well as to the groups providing financial contributions; for without their assistance the Symposium could not have been presented.



David E. Reid
President
Alberta Society of Professional Biologists

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SESSIONS I & II:

**NATIVE RESOURCE USE:
THE WAY IT IS AND THE WAY IT WAS**

OPENING ADDRESS

The Honourable Milt Pahl
Minister Responsible for Native Affairs
Edmonton, Alberta

As the Minister Responsible for Alberta Native Affairs and hopeful M.L.A. for Edmonton Mill Woods, it is my sincere pleasure to heartily welcome you to our city and bring you best wishes from the provincial government for a successful symposium. I say "hopeful M.L.A.", because on April 10 when Premier Getty issued the writ, I, along with my colleagues, lost my job as an M.L.A. However, I'm still partially employed and am still the Minister responsible for Native Affairs..... and in that capacity, WELCOME.

Considering topics for my address to you today brought back many good memories of the work I did together with biologists during my tenure as Director of the Alberta Oil Sands Environmental Research Program (AOSERP for short).

Many of you may be aware that my assistant, John Kristensen, is a biologist. John relates much of what goes on around him through the eyes of a biologist..... John is very precise and a simple request that roses go to a hospitalized constituent is liable to be followed by a query, "will that be damask roses, french roses or cabbage roses?" Heck, John, I don't know. Today, I thought I would try to do my homework and ask John if he knows whether conference participants will be enjoying Bison bison bison or Bison bison athabasca, at the barbecue tomorrow evening?

Trick questions aside, I know a lot more is going to happen here than productive socializing and good food. That is why Alberta Native Affairs has supported the Alberta Society of Professional Biologists in their efforts to organize this symposium to address the issue of Native People and Renewable Resource Management. Alberta Native Affairs is pleased to participate in these efforts because we recognize, as you do, the importance of provincial renewable resources to the traditional lifestyle of the Native people of Alberta.

Looking over the topics to be presented during the next three days, I see that we also have a strong belief that there are many potential economic and employment opportunities for the participation of Native people in the management of renewable resources. The next speaker, Mr. Bill Wilson, with whom I've sat around the constitutional table in Ottawa, will provide you with a more comprehensive overview of the long relationship Native people have had with nature. But, just let me say that, in a world fascinated with the technology of the micro-chip, we often overlook the wisdom of past generations. No renewable resource strategy in Alberta would be complete without considering the methods and philosophy of a people whose ancestors were an integral part of Alberta's ecosystem for 10,000 years.

Gatherings such as this serve to provide Native people with an important opportunity to share their knowledge of renewable resource management with professionals who, like themselves, have a deep commitment to the continued enhancement of the rich diversity of plants, fish, birds, and mammals around us. Upcoming presentations such as those by Chief Archie Waquan, Dr. Stuart Smith, and Peter Usher will, I am sure, provide examples of the special rights many Native people are endowed with to harvest wildlife. Furthermore, focusing on the importance of renewable resources to Native traditional lifestyle highlights for all of us, the significance of properly managing and thus enriching our environment so that it may serve and nurture future generations.

The Alberta Society of Professional Biologists is to be commended for examining their role in partnership with Native people. All too seldom in our society, do the "experts" open the doors to their view of the world to the public. Considering the topics and the broad range of interest represented by the speakers and participants, this symposium holds the promise of open and productive dialogue. I am encouraged to see that the symposium will address some of the many opportunities that may be presented to Native people through enhanced participation in renewable resource management. In fact, some of these exciting opportunities you will hear include areas in which Native communities, the provincial government, and professional biologists have worked together. As a team, Native people, biologists, and government have worked to improve the level of involvement of Native people in the management of renewable resources.

Over the past 3 years, Alberta Native Affairs has been involved with Chief Cyprien of the Fort Chipewyan Band and Dr. Stuart Smith. Research was undertaken on water management in the Fort Chipewyan area, and together, Dr. Smith (a biologist) and the community looked into enhancement of muskrat and waterfowl habitats. They also explored the potential for the cultivation of wild rice. I must say, I found this project fascinating..... Dr. Stu Smith..... I won't give away the plot..... but, this one is a real 'what came first: the chicken or the egg?' story, as the complex inter-relationship of water management, wild rice cultivation, and waterfowl and muskrat populations was explored.

Alberta Native Affairs, too, has also recognized the importance to Native communities of agricultural self-sufficiency. Of course, we all know that agricultural products are among our most valuable renewable resources. In collaboration with R.M.S. Management Consultants, we published a detailed study of the potential for market gardening in Native communities in northern Alberta. The study pointed out that small-scale market gardening could be a profitable and rewarding activity for Native people.

Native Affairs has also worked with agriculturalists and Native communities in the development of a two-phase study of the agricultural potential of Indian Reserves and Metis settlements in the province. These studies inventory the quality of agricultural potential of land, existing land use, problems facing enhanced use, and ways these obstacles can be overcome. As with the market garden study, these reports aim to provide Native people with choices and opportunities to share in Alberta agriculture..... the province's strongest renewable resource.

I notice that Dave McArthur will be discussing game ranching. This is an area that has caught the interest of several Alberta Native communities recently: the Kikino Metis Settlement, the Sucker Creek Indian Band, the Alexander Band, and others. Alberta Native Affairs supported some of these initial efforts to explore the practicality and profitability of raising buffalo (sorry to you biologists.....bison), for commercial sale. Touring the Sucker Creek facility, two things tip you off that they are not running a cattle operation: a complex system of seven to eight-foot barbed wire fencing and holding pens made of what looks like 4' x 8's. The Band has obviously developed a healthy respect for the power of these majestic beasts.

In other developments, efforts are underway to create a special provincial government working group on renewable resources. This group, similar to other working groups formed over the past year, will be made up of Native people, professionals, and government representatives. Its task will be to develop recommendations for practical and quick action the province can take to improve Native participation in renewable resource management. Before making those recommendations, the working group is expected to review existing policies and procedures and consult with many groups such as your society, Native organizations, communities, and interested individuals.

Our efforts to specifically involve Native communities in the management of renewable resources are underlined in the recently signed Federal/Provincial memorandum of understanding on Native Development. The emphasis of this innovative new agreement is on much improved coordination, and cooperation between Native communities and the two levels of government, as well as increased program flexibility. Renewable resource management is considered a priority area by both levels of government. Undoubtedly, the most important aspect of this initiative is its focus on community objectives and plans as determined by the community, not by government. In this way, a considerable array of government programs and services could be employed to meet the needs and aspirations of Native communities. Given the importance of renewable resources to most Native communities, I am sure Native planners will look to professional biologists for technical and scientific expertise.

This need to share expertise raises another area that you will be addressing, and that is the real need for more training opportunities for Native people in resource management. This involves a range of expertise including the down-to-earth, practical knowledge of Native trappers and fishermen. With some additional training, Native people could provide more technical assistance to professional biologists. This raises the need for more Native university, community college and technical institute graduates with special skills and knowledge that could be applied in the renewable resource management field. Government cannot and should not make career choices for its citizens. Parents provide leadership and guidance; but the Native students, themselves, must make the appropriate decision. That said, the province will continue exploring ways that aid can be directed to Native individuals interested in furthering their education in the area of renewable resource management.

As I said earlier, this symposium is an excellent forum for the presentation and discussion of two basic issues: how can we recognize in meaningful ways, the importance of renewable resources to the traditional Native lifestyle; and what is being done and what can be done to take advantage of opportunities for Native people to get involved in renewable resource management? We must work on it, together.

I must congratulate symposium organizers for their efforts to enhance information sharing. I understand that the upcoming presentations will be printed in a proceedings format. This will certainly encourage future reference and consideration of many good ideas. The display area is also a terrific thought. I would like to invite each of you to drop by the Alberta Native Affairs Booth. Our most recent communications effort is available there..... it's a 173 page book entitled, A Guide To Native Communities In Alberta. You may find it a useful reference guide.

In closing, have a good symposium..... work hard, but don't miss sampling some of the many visitor attractions Edmonton has to offer..... The Muttart Conservatory, John Janzen Nature Centre, Downtown's Expanding Boardwalk Area, The Wave Pool at the Mill Woods Recreational Centre, and for those of you inclined to see a different sort of wildlife..... there's West Edmonton Mall and Fantasyland. Enjoy your symposium. It's been a pleasure and honour to present the opening address.

KEYNOTE ADDRESS:

RESOURCE USE AND NATIVE CULTURE¹

Bill Wilson
Musgamagwa Tribal Council
Comox, British Columbia

Thank you very much. Can you hear me without this thing (microphone). I really don't like these things. I find them to be so totally foreign to the way our people communicate with each other. I often wonder whether the non-Indian people can get by without these things. I also wonder what the Indian people used to do before these things were invented ... I guess we did not have meetings, right?

Those assumptions, I think, are some of the things I wanted to talk to you about. I would like to start by congratulating the Oiler fans. On the way out, I was of mixed mind for the Flames. They kept giving us the scores, and the fellow next to me kept asking me "are you for Edmonton or are you for Calgary?". I said I'll tell you as soon as the game is over. And that seems to me to be the way that we deal with a whole lot of the issues that we are involved in. In my community, we have as many against us as we have people working for us. In fact, we think that most people are working against us. We always know that when there is some kind of a victory or something good that takes place that everybody thought about it first.

There is one thing though that we all thought about first in our area and that is use of the renewable natural resources. In my area, as most other areas in the country, the Native people for whom I work and from whom I have sprung, have used the renewable resources for at least 2000 years. Even the white scientist who thought that we came from the ice bridge across the Bering Sea, and that we are mongolian or some oriental extraction, now admit that we were here at least some 15,000 year before the ice bridge theory was in existence. This we have known ourselves for years. In my area, our entire economy has been based since time memorial on the salmon and sea resources, resources from the forest, and even in what might be considered an unsophisticated way, on the mineral resources of the region.

If you happen to be fortunate enough -- and I have been accused of it, but I am not quite that old to have been around 100 years ago -- you would have seen totally sufficient Indian communities in my region as you would have seen across the country. And close to the province of British Columbia, you would have seen villages situated at the mouths of rivers or on river banks that produce salmon every year. What could be better than sitting there and waiting for the fall for the salmon to come home to you to produce the wealth that you can exchange for other wealths in other areas or for the animals to come home to you to simply take.

As a friend of mine mentioned, this idealistic assumption has been corrupted by white people, and they spend 50 weeks of the year trying to earn enough money to spend 2 weeks of the year living like Indians. That may very well have been true lets say 50 years ago. You go out to commune with nature and sit on the river bank and catch salmon or you fish or whatever it is that you like in the natural resources and you eat it, or you trade it, or you smoke it, or you do something with it. That is basically what we did. If you were

¹ This paper is a transcription of the Symposium presentation.

able to look at a map of our area, you would notice that the Indian bands are located adjacent to clam beds, trout streams or salmon rivers, or would be located at the heads of inlets where the oolachans would come, or would be located near where the berry picking or other resources could be easily harvested. It is no accident. You would assume that having 25,000 years of experience you would find it very easy to understand. You should live next to the supermarket, even we know that.

The problem of course, is that non-Indian people arrived in the country. This I want to tell you. Many people know that one of the big issues in British Columbia now is the new federal minister and Indian affairs policy regarding salmon. Well something you should understand, it is only about as recent as 50 years ago that white people did not eat salmon. It was regarded as dog food or a food of lesser individuals or a food that would be used to feed the poor in London, and that is what the market was. High society white people did not eat it because Indian people ate so much of it. Even in Vancouver 50 years ago you could not sell a salmon on the street. But our people depended on it, totally depended on it. Our cultural practices reflect the use of the salmon, our tradition, our blankets, our songs, our language reflect the the returning and the cycle of the salmon. And the reality of it is, if it wasn't for the salmon, there would not be a heck of a lot of Indians in British Columbia because it is upon the salmon and the natural resources that we depended. We had full use and access to them.

I had a friend spend two weeks with me from the National Film Board. He is from Quebec. He said to me, "How did you people survive out here in this hostile environment?". So we jumped into my yacht and left my million and a half at home and took a trip up the coast to fish and dig clams. Later we went home and ate them all. The only thing that we purchased, other than the gasoline to get there and back, was the wine we washed the salmon and the oysters down with. And I said to him that they were not fresh enough. We should have really taken the wine to the beach and eaten them there, because the 15 minute delay has bothered me. And that is the way that our people lived for very many years. The salmon would come into their rivers, they would smoke them, dry them, eat them fresh, cut them up, and use all of their parts, as people in the north use the seal. And what they did not need or require for their immediate use they would trade with other people who had things they did not have.

One of the trade goods, of course, is not only the salmon but the oolachans which to us is like gold, a condiment to put on food, a medicine and what makes us so strong and handsome. My mother said I should have eaten more. We had what could be described as an idyllic situation. You really did not have to work very hard to make a living. In fact you had to be pretty stupid not to live extremely well. But the first people who came to us were pretty stupid. They did not eat the salmon, or know how to use the forest resources. They did not know how to use the clam resources, the oolachans, the cods and other things. We taught them how to use those things. The unfortunate thing is, once they learned how to use those things, they viewed them as money, not as something upon which you culture and your survival would be based. But upon which you could exchange things to acquire material possessions and other things and exercise influence. Very quickly, we became alienated from our own natural resources. Very quickly the canneries were set up and we adapted to that. The women, and this is not chauvanistic, worked in the canneries and the men worked in the fish boats. They worked for two months and then partied for 10 months.

Our parties were the foundation of our culture. We have a potlatch system where we give away our wealth -- we give away our wealth to resolve the conflicts that we have between and amongst ourselves, and also to establish our status in the communities. The white people, of course, did not understand that. How can you work so hard to acquire

wealth and then give it away. Well there is a very basic reason for it, and the reason is because people acquire wealth at different rates, at different times of the year, in different places. So what better economic distribution system than to resolve your internal animosities, sanctify your marriages, deaths and births, practice your culture, songs and dances, and at the same time, distribute the wealth among the people who live in your area, speak your language and your culture. A lot of that is now gone, but part of that system still remains strong in our area. It does not have its foundation on the ability to earn money in the summer time, or harvest goods in the summer time.

The fact is that natural resources around us are alienated from us. The renewable natural resources upon which we depended for so long have for the most part been removed from us by large forest companies, large fishing companies, by tourists, by American people coming up in yachts and over harvesting the sand beds, by other people who have exploited the resources because they did not see the necessity of perpetuating that resource. The sad reality is that a good majority of our people now depend on government handouts as Native people, Inuit and Metis people across the country, to a large extent, depend on the umbilical cord to government.

It reminds me of a story I heard on the plane last night. The fellow was talking to me about an Inuit Hearing that they had up north in Frobisher Bay or somewhere. They had a phone in program and they were discussing the use of the polar bear. Everybody was saying that we should not use the polar bear, its going to be extinct, everybody is killing the polar bear. An old Inuit fellow phoned in and said in Inuktituk " Did God put the polar bear here for our use? The answer is yes he did or she did. The second question is, has he changed his mind recently?" That to me represents the exact attitude that our people have to the use of our natural resources, the salmon, the clams, the other things that are integral to our culture.

We now have sports fishermen, commercial fishermen and other people whose ancestors 50 years ago did not even use the natural resources, telling us that they have an inalienable right as Canadians to use the salmon. That is bullshit. The Native people whether it is salmon or the other resources are the only people in my mind who have an inalienable right to use those resources. That does not, of course, mean that the non-Indian people cannot use them, but in the system of priorities upon which we based our use of any resources we must place Native Indian people, Inuit people and Metis people second only to conservation. This is not an and/or proposition. I would like to see an understanding that the resources were once so plentiful that there was enough for everybody. There is absolutely no reasons if we put our minds together that the resources cannot again be so plentiful -- that there will be more than enough for everybody. But I know people in my area who are willing to cut down the last tree in the province of British Columbia, or catch the last egg producing chinook salmon, because of nothing else but greed, money, dollars. I think that those attitudes are what we should abandon. I would hope that as biologists you would certainly understand that. If there is a profession, and it certainly is not law, that understands the aspirations of Native Indian people, it certainly must be biologists, who understand the relationship between and among all of the creatures and all of the environment and the physical environment itself.

I want to conclude and I'll do the same thing Paul was accused by everybody of doing. I'll say this three times and then I'm finished. I want to conclude by telling you my belief in the future of my people. And while the people from other tribes or nations are more than capable of speaking for themselves, I would like to believe that the things I believe in for my own people are the same things that everybody in one form or another believe in for their people. There is no future for Native Indian people, Inuit people, or Metis people in this country unless their economy is based on renewable natural resources.

Those people who would assume that non-Indian assumptions about economic development, or the exploitation of the natural resources are somehow going to substitute for a history that is 25,000 years long are seriously deluding themselves. And the unfortunate reality is that their implementing this delusion through government policies that are exercised at the expense of the Native Indian, Inuit people and Metis people. The experience in Alaska, recently written so eloquently by Berger, indicates that unless the Native Indian people are allowed to continue to be use natural resources, all of the grandious schemes of big money, big government, and big institutions will fall by the way side.

In my opinion, and even though I participated in all the processes, the discussions in regards to the constitution, the devolution of the Department of Indian Affairs, the phase-out of the DIAND, self government, land claims, aboriginal title -- all those other things -- they don't mean a damn thing unless people in the community can make decisions for themselves about the natural resources that exist around them and can make decisions that are not based upon white expectations about that use. Those decisions must be based upon their cultural expectations, their own physical desires in order to ensure that there is a foundation that they can leave for their children that will last another 25,000 years. We must understand that the use of the resources by Indian, Inuit or Metis people may very well be in conflict with the expectations of non-Indians. And we must understand that because they are non-Indian people, they are incapable of understanding fully our desires and our relationship to the land and to the resources. Because they do not understand it fully, and they are not one of us, doesn't mean that we cannot together cooperate to make sure that all of us have the use of those resources.

I would invite all of you -- well not all of you, I don't want Clive here or Gordy Antoine -- I invite the rest of you to come to my community and share in our natural resources. But I want you to understand that those natural resources are not there for us to exploit for money, big houses or yachts like Bill Wilson's. They are there to make sure that the Indian kids that come after them can make decisions based on their culture to perpetuate their language and their institutions so they can exist for another 25,000 years as Native Indian people. That to me is the challenge not only for Indian leaders, but for biologists and also for the government people whom we advise, often times with deaf ears on their part. Somehow we have to bring across the reality that if the natural renewable resource base does not exist, the Native people do not exist. I believe that if that does not exist, all of us are going to have a very difficult time existing on the artificial institutions we have developed for our economy. And we are seeing that now.

RESOURCE HARVESTING AND THE SOCIAL STRUCTURE OF NATIVE COMMUNITIES

Dr. George W. Wenzel

Research Associate, Department of Geography
McGill University, Montreal, Quebec

ABSTRACT: *Anthropological interest in Native resource harvesting began with the cultural relativist work by Franz Boas in the late 19th century. Contemporary studies of northern hunter subsistence have relied upon various materialist theoretical approaches developed from the cultural ecology of Julian Steward (1955) and the cultural evolutionism of Leslie White (1959). Although materialist approaches have provided both a qualitative and quantitative data base upon which to build subsistence theory, Native harvesters and some anthropologists are questioning the validity of such an approach to explain the relationship between Native societies and their resource base.*

This paper will examine the relevance of social structural and organizational knowledge in understanding Native resource harvesting. This will be done from the perspective that Native communities function in a rational economic mode, albeit one in which order is grounded in indigenous social structural concomitants. As well, a second facet of this discussion will focus on the cognitive relationship between Native harvesters and renewable resources. Data collected from recent fieldwork among Eastern Arctic Inuit support the conclusion that harvesting and contemporary economic activities are linked through social structure and have a complementary role in renewable resource exploitation and the maintenance of the relationship between Inuit and their land.

1.0 INUIT HARVESTING AND ECOLOGICAL ANTHROPOLOGY

The study of hunter-gatherer subsistence and adaptation has long been of interest to anthropologists. Until recently, the analytical thrust in such studies has been a functionalist one in which man-environment interactions were interpreted as separate from hunter-gatherer social relations. Steward's (1955) exposition of cultural ecology, as a means of understanding society-environment interaction, offered a beginning integrative approach to analyzing the multivariate role of social formation, as structure and behaviour, in human ecological systems.

It is in the context of northern society and environment, especially with regard to subsistence studies, that the cultural ecological approach has been repeatedly applied and refined. Indeed, the apparentness of a social component in northern man-environment relations can be seen in Boas' (1888) work among the Inuit of Eastern Baffin Island. In his seminal research, Boas observed that a clear relationship existed between Inuit winter residential location (sea ice camps), environmental conditions (land-fast ice), and resource availability (ringed seal breathing hole concentrations). To Boas, therefore, belongs the credit of non-deterministically linking the physical, biological, and social components of the northern ecosystem into a single integrated framework.

Boas' work, however, only laid the initial foundation for more comprehensive examination of northern society-environment relationships, as most subsequent northern

research remained primarily functional and descriptive in orientation. While much of this work, through the 1950's, contributed hugely to our understanding of Inuit and Subarctic Indian social structure, it provided only remote insight to the northern man-land dynamic.

Steward's (1955) development of what he termed a cultural ecological methodology offered a direct means for assessing aspects of man-land interaction. Its primary tenet was stated as, "...the inter-relationship of exploitative or productive technology and environment must be analyzed". Only as a final step did Steward relate environmental relations to "other aspects of culture" and, in so doing, clearly suggested the subordination of socio-cultural features to a techno-environmental complex (White 1949, Harris 1968).

A clear benefit of the gradual elaboration of Stewardian ecological methodology was the: 1) expansion of scientific interest in northern man-land relations, particularly as expressed in subsistence activities; and 2) the development of a quantitative data base which purposefully illuminated aspects of the adaptive system, most notably in the form of bioenergetic and microeconomic expression. This approach did, however, entail certain costs. Foremost among these was the reduction of human ecological systemics to cost-benefit terms through the subtraction of the qualitative dynamics between society and local environment. Thus, Helm (1969) could write that a primary objective of cultural ecology was, "...distinguishing phenomena that can be 'assumed or demonstrated to be related to cultural ecological forces from phenomena that can be attributed to efficient causes in the sphere of sociology and social psychology' (Change 1962)".

The problem such an approach presents in the study of Inuit ecology and resource harvesting is that it casually reduces the integrative aspect of the research methodology and, more seriously, requires that modes of ecological regulation between harvesters and resources can only be sought outside the structure of the harvester society. The source(s) of regulation of harvesting activities must, therefore, be sought either in the natural environment or imposed by non-indigenous human agents.

The point where internal regulatory structuring is most recognizable in cultural ecological research is with regard to internal economic organization. Generally speaking, there is a clear correlation between economic relations and internal mechanisms for structuring these relations; this is, in fact, an accepted component of what is termed Native economy, along with resource harvesting itself. Unfortunately, while a system is posited and is identifiable for economic interaction, based on social structural correlates, these same correlates are less often seen as having efficacy for structuring harvesting activities. It is here that the latest approaches in ecological anthropology are moving.

2.0 STRUCTURAL REGULATION IN INUIT COMMUNITIES

2.1 ECONOMICS AND COMMUNITY

The structural-functional research (see Damas 1963, 1972a; Heinrich 1963; Burch 1975) carried out among Inuit in the last two decades, while only of apparent cursory interest in analyses of Inuit resource exploitation and harvesting, have provided fundamental data for interpreting internal social regulatory modes applicable to enhancing our understanding of the relationship between social structure and harvesting activities, production, and allocation. A key to such understanding comes from Heinrich (1963) in his discussion of Inuit adaptation,

"Kinship, operating in a variety of ways, is the important other adjustive mechanism since there is little else in the way of integration at a higher level than kinship in Inupiaq society."

Kinship, therefore, along with technology are the two primary elements comprising the traditional Inuit adaptive system. In my own work at Clyde River, N.W.T. (Wenzel 1981), I presented the position that while the artifact complex employed by Inuit can be viewed as a limiting factor on renewable resource activities, it does not function as an integrative element in the harvesting system. Through the remainder of this presentation, it is upon this aspect of Inuit harvesting and ecology that I shall elaborate.

One of the first groups of outsiders residing among Inuit to recognize that there was linkage between harvesting and social relations were representatives of the fur trade. Indeed, part of the fur trade subculture was the establishing of relations with "trading captains" (Morantz and Francis 1983) and "camp bosses" (Sampath 1978), a process mistakenly founded on European perceptions of hierarchical social delineation based on individual harvester success.

Both Damas (1963) and Heinrich (1963) have contributed significantly to our knowledge of Inuit social structure and how this structure contributes to the organization of interpersonal, economic and ecological relations. Of particular interest is Damas' (1963) data on social structure among Iglulingmiut Inuit of western Foxe Basin. In later work, he established (Damas 1972b, 1975) the manner in which the characteristic dyadic system that organizes interpersonal relations serves a similar function in terms of resource allocation.

This system of generalized reciprocity, of sharing, is organized around the extended family (ilagiit) and the same rules identified by Damas (1963), related to the chronological and geneological positioning of individuals, facilitate the flow and direction of subsistence products within the group. This basic system, termed ningiq by Damas (1972), is one in which harvest products brought into the ilagiit unit by constituent harvesters are stored with the oldest male in the ilagiit, who is often referred to by the term isumataq, or leader¹. Once such deposition has been made, extended family members can freely draw on these supplies. As well, the isumataq can be approached by non-kin for food and can, himself, invoke a number of other mechanisms for distributing food beyond the social boundaries of the ilagiit. (My own data (Wenzel 1981) correlates well with Damas' basic set of Iglulingmiut sharing mechanisms, but with some different designating terminology. As well, Nelson (pers. comm.) has confirmed the presence of the basic ilagiit sharing structure among northwest Alaskan Inupiaq, while Gross (1985) has found a similar system among Yupik Eskimos.)

Ningiq, known as tugagaujuq among Clyde Inuit, has been described by informants as the movement of food "upward" to geneologically superior kinsmen within the ilagiit. In this way, the family leader acts as the repository and allocator of subsistence products entering the ilagiit through all active harvesters. Once this "upward" movement of food is completed, further dispersal may then occur along several avenues. In social structural terms, the most direct mechanism is tigutwinag, in which subordinated members of the ilagiit, who may have been food suppliers, can take food without further permission

¹ The term isumataq carries the near literal meaning in English of "one who thinks". It variously glosses as leader-decision-maker in so far as the consensual process of Inuit decision-making involves leaders, as in our frame of reference. Those who are isumataq are generally in a geneologically and chronologically superior position to the main population.

from the head of the unit. Non-core members, however, must act with greater restraint with respect to direct taking of food. Instead, a complex set² of commensal and offering mechanisms, which are less tightly ordered by Inuit structural rules, are practiced within communities or between individuals to achieve the widest dispersal of processed resources.

The basic system, that is the one most obviously related to Inuit social structure, involving tuqagaujuq-tigutwinaq transfers of food, generally encompasses nearly all members of the local community. In Clyde River, the 13 or 14 extended families which comprise the community include nearly all the 480 Inuit residing there. The following diagram (Figure 1) illustrates the movement of food within one Clyde ilagiit during a two week period in the summer of 1985.

2.2 HARVESTING PATTERNS AND SOCIAL STRUCTURE

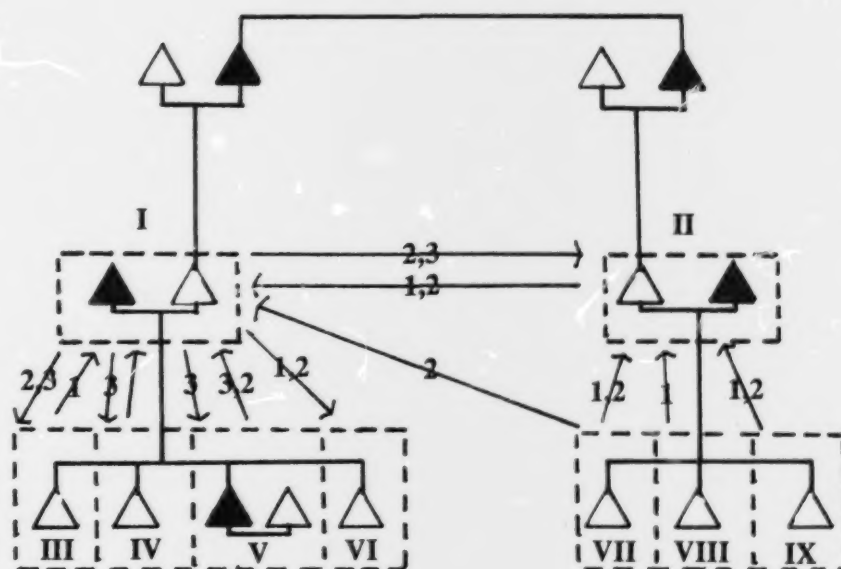
Damas (1963) has placed particular emphasis on the similarity between the vertical structuring of Inuit kinship networks and lines of authority in Inuit local groupings. An indication of this is the prominence in Inuit kinship terminology of superior-subordinant relations between dyadic pairings of kinsmen (see Damas 1972a). In the expression of such pairings (e.g., father-son, ilniriit), responsibility to authority is indicated by use of the root word for the subordinant individual (iling, son) with the affix -riit or -giit. Thus, age/geneological vertical pairings are clearly indicated.

Damas (1963) demonstrates the use of the same linguistic idiom for connoting economic pairings. Among the Iglulingmiut, he observed such usage with reference to task group associations (boat crews - umiagqatigiit), trading partnerships (niuvilirik), and, among Netsilingmiut, seal sharing partnerships (niqaiturvigiit) (see Damas 1972a, Van de Velde 1956). At Clyde River, a similar construction is used to describe local group members, and even hunting partners (nunariit), although the latter usage is explained by Clyde elders as an artifact from the pre-centralized village period when such "partners" generally co-resided in discrete local groups, were often kin-linked, and members of the same ilagiit.

As Damas (1972b) notes, unlike the Netsilik and Copper Inuit groups of the central Arctic coast, formal seal sharing partnerships were replaced among Iglulik area Inuit by isumataq (eldest male) decision-making in economic and ecological activities. The same was and is true among Clyde and Arctic Bay Inuit, where nunariit is still employed as the term denoting communal and group hunting by male kinsmen.

As a kin-linked ecological task unit, nunariit association authority patterns mirror authority patterns within the ilagiit. However, because of the spatial and temporal circumstances that harvesting activities impose on nunariit operations on the land, the exercise of decision-making is flexible and situational, rather than rigidly bound by structural forms as practiced in the residential setting. What emerges is a pattern of authority and decision-making which is multi-layered and operational, while adhering to the basic constructs of relational positioning in the ilagiit formation. This is adaptively necessary in order for any nunariit/ilagiit to successfully exploit coinciding resource possibilities.

² Among the other sharing practices still carried on by Clyde River Inuit are: nirriyaktuqtuq - commensalism, akpaalugit - inviting in, minagtuq - distributing cached food, paiyuktuq or quaktuaktuq - giving gifts of food.



I, II = Discrete Household

1 = Ringed Seal

2 = Caribou

3 = Narwhal Igunaq

↔ = Direction of food flow

Figure 1. Food allocation in one Clyde Ilagiit, 28 May - 12 June 1985.

Among Clyde Inuit, decision-making and direction in resource harvesting is organized in close conformity to the framework presented above.

Primary decision-making as to resource harvesting activities is carried out in two ways. At Clyde River, local harvesting opportunities are limited for the bulk of the year, or at least through the winter, to breathing hole sealing. This activity concentrates in an area (see Figure 2) approximately 25 to 50 km from the village, well within the single day range of a snowmobile-equipped hunter. Here, Clyde harvesters hunt for ringed seal on a daily basis, ostensibly alone or in co-operating units of 2-3 men.

The decision to seek seals in this area (known locally as Pikaluit) is an individual choice, exercised by all day-hunt participants. In fact, resource availability and time constraints offer few other local options. The primary consideration in site choice is turnaround time and, also, knowledge that other Clyde hunters will be present. Therefore, personal physical risk and risk in sealing success is reduced.

Ostensibly, breathing hole hunting in this area does not involve isumataq, or senior ilagiit, decision-making. However, on-site activity often does involve nunariit cooperation, even though such associations may be opportunistic and temporary.

When several harvesters travel to the breathing hole zone together or join together at the locale, the oldest or most genealogical senior takes on the responsibility of directing joint activities. Typical of such local direction is the case of three brothers hunting together. Often the senior one will "assign" breathing holes to his younger siblings and will decide when to terminate a particular hunting episode. If a seal, or several, are captured, he will assume the responsibility of ensuring their deposition with the head of the ilagiit or in allocating "shares" among the hunters. A different situation prevails when cooperating hunters are not closely-linked kin. In such cases, the senior will direct hunting as above, but the individual harvesters retain control over their own harvests, both as to distribution with hunt participants, ilagiit members, or to retain the harvest for themselves.

Long range harvesting ventures, involving hunts of several days or weeks, involve a more complex decision-making pattern, but one which more clearly demonstrates the relation of harvest activity organization to social structure. In such harvesting cases, decision-making begins with the isumataq, extended family head, and carries through at least one more and sometimes several on-site levels.

This past spring in Clyde River, the male members of one of the largest ilagiit, which formerly (1938-1954) occupied and concentrated its land use activities in the Scott Inlet-Dexterity Fiord-Royal Society Fiord area (see Figure 2), decided to mount a major trip for caribou to the most distant part of this area. This decision was made by the two oldest males in this expanded ilagiit³, although neither was himself actually participating in this journey. These men, one in his seventies and the other in his fifties, retained an intimate knowledge of this area and were clearly isumataq with respect to genealogical position in the kin unit and in environmental information.

The actual harvesting party was composed of four adult men, ranging in age from the late thirties to mid-twenties, as well as several sons of these men. When the group left

³ Ilagiit is used by Inuit social anthropologists to describe the extended family unit. Balikci (1964) has, however, noted that the ilagiit can be manifest as an expanded or restricted social unit, depending on whether affines and certain non-kin are incorporated into the group.

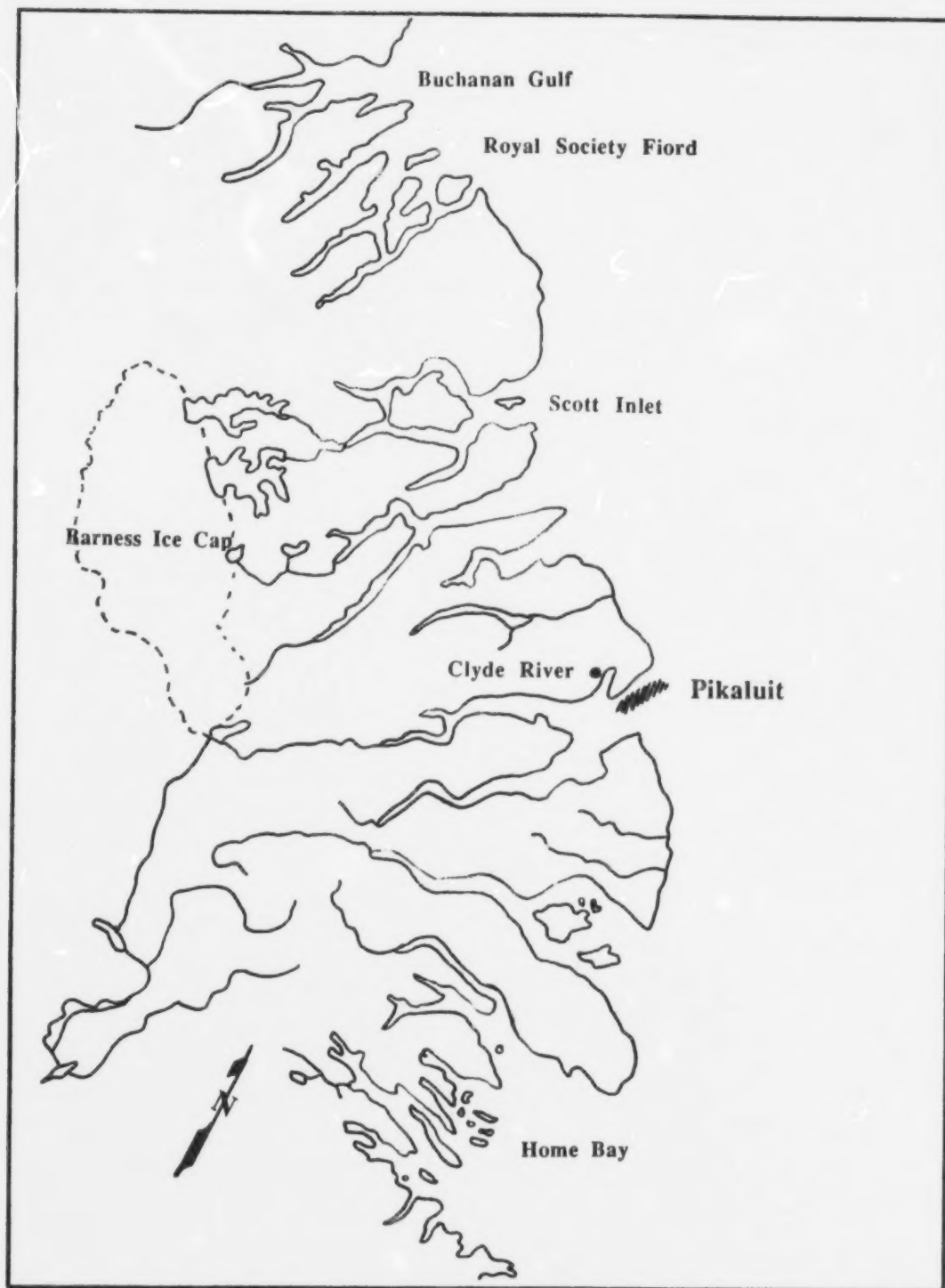


Figure 2. The location of the primary seal harvesting area (locally known as Pikaluit) near Clyde River, N.W.T.

Clyde River, it travelled to the Royal Society Fiord region as a unit. Once in the area, however, the oldest man present, who was the son of the eldest family leader, assumed the decision-making role for the task group for the duration of the hunt, although he was only a cousin of the other hunters who were all brothers. He did so because he was in an age superior position to the other group members, all of whom were skilled harvesters, and because he had, as an adolescent, actively hunted in the area.

While harvesting is usually seen by outside observers as an individual activity, the examples offered above clearly demonstrate that decision-making in harvesting follows social structural directives most often associated with the maintenance of kin groups and interpersonal relations. This is, in fact, the case put forth by Heinrich (1963) in the statement quoted earlier.

The need for some formal structure in the organizing and carrying out of harvesting operations are several. In the broadest cultural ecological sense, such upper-level decision-making, as that by *ilagiit* heads, alleviates resource scheduling problems (Flannery 1968, Wenzel 1981) when multiple resources are available. The limited manpower options present in a single extended family (3-8 adult males) make scheduling decisions a relevant consideration, especially as certain activities are high risk in terms of economic benefits and costs. In the system described, the probabilities of at least partial harvesting success is enhanced by distributing harvester "eggs between baskets" or, indeed, concentrating them on a single activity.

Second, primary decisions about harvesting are being made by group members who possess the greatest available environmental information. As the examples demonstrate, in some cases, as in sealing in areas adjacent to Clyde River, such information requirements are minimal, but, as in the second, when the activity area is one little known to the primary participants, potentially critical information is obtainable only from those who know the land best.

Similar considerations come into play at the level of on-site resource harvesting. Older kinsmen-hunters supply an important link between the knowledge of the *isumataq* and practical and immediate decision needs. This is because these intermediate leaders possess at least important, if partial, knowledge specific to exploiting resources under a variety of environmental circumstances. Such intermediate leadership, although provided by harvesters not necessarily regarded as *isumataq*, does place more experienced hunters⁴ in a direct responsibility role within the task group. This is especially important because primary level *ilagiit-nunariit* decision-makers often cannot fill these active roles due to advanced age and physical disability.

2.3 SOCIAL STRUCTURE AND THE INTEGRATION OF INUIT HARVESTING AND ECONOMIC SUBSYSTEMS: A SUMMARY

A relationship between Inuit social structure and the subsistence system can only be posited if two conditions are accepted. The first is that this system is composed of two aspects, resource harvesting and the allocation of harvest products. The second is that this

⁴ In July 1983, four Clyde Inuit were trapped by moving ice in central Home Bay while narwhal hunting. They were adrift and virtually out of all contact with the village and organized search and rescue operations for over a week. One participant's mother, then living in Frobisher Bay, was very distraught because of her son's inexperience. However, when she learned that a certain middle-age Clyde hunter was with her son and his two young companions, she visibly relaxed and stated that she knew her son would be well because the older man possessed self-control.

system is rational and ordered. Ethnological data (Damas 1969, Fienup-Riordan 1983, Wenzel 1981) support both these conditions (see also Damas 1972b, Burch 1975, Gross 1985).

Heinrich (1963) has suggested that, within Eskimo society, only social structure provides the requisite behavioural organization to meet these systems needs (see Langdon 1984). The question remaining, however, is whether these relationships are interpretable solely in functionalist terms or within a broader ecological framework.

In functionalist explanatory terms, there are two possible ways of linking social structure with subsistence-harvesting aspects. The first is that through social structure, a system of sanctions can be invoked in cases where task group participants behave non-normatively. The other is that harvest operations that are carried out within a larger structural-organizational universe reduce economic and personal risk among individual harvesters. Both such explanations, however, have weaknesses. In the former case, the punitive aspect of social structural concomitants, insofar as they can coerce normative subsistence behaviour, is too weak, or, conversely, the system is too flexible to prevent social deviation. The second functionalist explanation is equally unsatisfying because it assumes that the randomness present in the natural environment is amenable to predictability through structurally-derived organizational mechanisms. One obvious counter example involves alliances between harvesters based on mutual selection of subsistence activity associates based on known previous success.

In the cultural ecological approach outlined here and elsewhere (Wenzel 1981, 1984), the organizational attributes present in Inuit social structure are seen as an inherent part of the Inuit harvesting system. Accepting Heinrich's (1963) view that Eskimo society contains no other large institutional constructs other than kinship and having posited that the Inuit harvesting-subsistence regime is a rational one, only kinship can provide the organizational framework that coordinated harvesting activities require.

This is logical if only because resource harvesting requires a structural order for the integration of personnel, technological, and economic resources. And in communities, where individuals, households, and extended families are joined in a single social network, the rules which direct interpersonal and intergenerational relations form an efficient and flexible system for managing harvesting and allocational activities. To associate Inuit communities and renewable resource harvesting without recognizing this structural aspect is to misunderstand that, for Inuit, community encompasses not only a spatial (locality) and material (technology) dimension, but also a temporal (generational) and information (knowledge) dynamics.

3.0 INUIT RESOURCE HARVESTING AND COMMUNITY: (TWO) COGNITIVE VIEWS

Ecological anthropology, although conceived as a more nomothetic means of analyzing questions of other peoples' cultures, is nonetheless a device for constructing an explanatory model (Caws 1976) of, in this case, the way Inuit social structure functions as an organizing system for resource harvesting and subsistence economic activities. It is hopefully an accurate depiction and explanation of the operational model Eastern Arctic Inuit construct themselves through their active harvesting and sharing behaviour. However, this cultural ecological "model" does not necessarily include within it (and I suggest that it does not) the representational model Inuit have of their own behaviour. According to Caws, this representational model is based in the way Inuit perceive their

harvesting and other behaviours (including social structure) and is, in fact, their conscious model, while the operational model is unconscious.

The exposition above is included because it is necessary in addressing such questions as Inuit and other Native peoples harvesting and subsistence systems that it be realized that explanatory models, such as the one I have presented, be seen for what they are - the best depiction possible of the Inuit operational model. Inuit are consciously working with their own representational models in which harvesting may only be the point at which the human community comes into contact with a larger community or universe that encompasses all living and non-living entities in the environment.

In his most recent book, Arctic Dreams: Imagination and Dreams in a Northern Landscape, Barry Lopez (1986), in musing upon how animals might organize land into a meaningful landscape, use the word "Umwelt" meaning self-world, in an attempt to get at this matter. In a footnote, he states, "A specific environment contains many 'Umwelten', no two of which are the same." This is too often forgotten when we see another culture as simply other people who happen to have a different operational model. Umwelt is their representational model.

3.1 RESOURCE HARVESTING, STRUCTURE, AND COMMUNITY: AN INUIT REPRESENTATIONAL MODEL

The explication and demystification of another culture's representational model(s) requires not only the ability to observe active behaviour, but to understand real discourse. Unfortunately, few scientists are able to include such data in their own explanatory models.

I am afraid that I am not able to count myself among the few who have these skills. I do, however, think that I, based on conversations and interviews with Clyde River, Arctic Bay and Somerset Island Inuit, can make a few general cognitive statements. I caution, however, that these remarks are my own thoughts insofar as the way they are presented here.

I take as my starting point a basic statement I have repeatedly heard from Inuit. This is that individual harvesters take animals, I have almost never heard an Inuk say that he has killed an animal. This matter of taking carries with it the implication that something has been given. Further implied is the idea that animals give themselves to humans.

This, perhaps on first glance, does not appear to be anything but a semantic hook which means the same thing as to kill an animal. However, such an offering and acceptance construct is consistent with the psycho-religious perspective often attributed to many Native subsistence harvesters (such as Feit, Scott and Tanner on Eastern Cree; see also Herscovici 1984)-- i. e. that at least all living entities have the ability to exercise individual choice in what we interpret as a predator-prey relationship. There is a relationship, but it is one living entities enter into through conscious choice, albeit in roles consistent with the structure of the environment.

Between Inuit and animals, the articulation point in the human-animal relationship comes through harvesting. Inuit are always mindful of the nature of this relationship and emphasize that: 1) animals are intelligent beings, and 2) that the hunter must always have a proper attitude. One part of this attitude is that for a hunter to be successful, he must always clearly hold an image of the animal he seeks in mind. To not do so is an indication to the animal of lack of seriousness or respect. By the same token, Inuit view other manipulations of animals, such as biological censusing, as just that - manipulation.

In my own way, I see this relationship as not all that dissimilar from the way Inuit social relations and communities are structured. Many of the same concomitants, like respect, operate in the maintenance of the harvesting system. And it is the action of harvesting that presents the contact point between co-resident beings in this larger construct of environment such as community.

3.2 THE ANTI-SEALING MOVEMENT AND INUIT

The anti-sealing movement has its own explanatory model of Inuit sealing and, I suspect, all resource harvesting. This model is based neither on Inuit representational constructs nor, in a very real way, on the Inuit operational model.

It is, in fact, rooted in a model which it holds of how Inuit once interacted with the environment, how Inuit culture has been modified by contact with our own, and how our own culture has so poorly served the environment. Leaving aside other aspects of this explanatory model, a central theme of importance in this discussion is that environment is separated from people, at least under the conditions we now have today.

Recently (Wenzel 1985), I attempted to place attitudes within the anti-sealing movement toward Inuit in some analytical perspective. I did this on the basis of analyzing interview statements made by individuals instrumental at various times in anti-sealing campaigns. A main thread which was present in many of these interviews was that Inuit society had been drastically modified by the influence of our own and that this was nowhere more apparent than in Inuit pursuit and use of wildlife. Essentially, Inuit values, environmental, spiritual and economic (although it is problematic from these interviews whether economy was a pre-contact Inuit consideration), have been permeated and replaced by our own values and that the dominant contemporary element in Inuit-animal relations is production for an accepted commercial economy. As Steven Best has said, "Most people cherish those technological advances that make life easier, more enjoyable, and safer; Inuit... have amply demonstrated the same quality" (Best 1985).

The problem this leads to is that people, whether Inuit, other Native harvesters or ourselves, have continually increasing material appetites, even Inuit will "act to excess...human beings act to excess" (Best 1984, pers. comm.). Indeed, the technology of modern Inuit hunting, snowmobiles and high-powered rifles, along with VCR's and freezers, are cited (Weber 1982, pers. comm., Boe 1984, pers. comm.) cited as examples of a consumerist and commercial trend in Inuit approaches to wildlife.

I would argue that the anti-sealing explanatory model is one which is built from a conceptualization of our own man-environment operational model. (It may also be the case that the holders of this explanatory construct see it as being grounded in a southern representational model as well.) Within it, there is no attempt to critically analyze the socio-cultural reality of Inuit harvesting and its connection to a larger concept of community in Inuit representational terms. I contrast this anti-sealing model with both the explanatory model of Inuit subsistence operations (resource harvesting and sharing) which takes the view that resource harvesting is rooted in social structure and, in fact, is a community strategy, not that of a single harvester or even a group of harvesters. Jose Ortega y Gasset's (1986) statement on the ethos of hunting, "I am I and the environment", takes on real meaning relative to Inuit when transposed as "I am I and my community".

4.0 ACKNOWLEDGEMENTS

I wish to extend my sincerest thanks to the many people of Clyde River, Kuganiuk, Arctic Bay, and other Eastern arctic communities for their many years of willing cooperation and patience with my research. They have ensured that it was never work. I wish also to acknowledge the Royal Commission on Seals and the Sealing Industry in Canada which provided funding for the 1985 phase of my Clyde research. And especially to Ms. Kristen S. Borre for encouraging me to extend beyond the ecological to the cognitive. To all these people go my thanks and, of course, for any errors only I am responsible.

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LUNCHEON ADDRESS:
NATIVE RESOURCE MANAGEMENT AT A TURNING POINT?

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In selecting the topic for my remarks today I have quite simply taken the theme of your symposium of Native People and Renewable Resource Management and added to it the question, at a turning point?

At the outset, I want to thank the Alberta Society of Professional Biologists for this opportunity to address this most important theme which you have selected as the focus for this your tenth annual symposium.

I wish to convey to you the sense of excitement my colleagues and I felt last fall when we first saw your proposed program for this conference. One was immediately struck by both your selection of topics and the list of names, Native and non-Native whom you intended to draw upon as speakers. It was obvious to us at the Department of Indian Affairs that this was going to be an event of major significance between the Native and the scientific communities.

Our provincial colleagues at Alberta Native Affairs also recognized the value to be realized from a symposium that would focus on this important issue and this was reflected in the remarks of the Honourable Milt Pahl, Minister Responsible for Native Affairs in his opening address to you earlier this morning.

Prior to my prepared remarks I would like to share with you some thoughts I had yesterday evening while coming out on the plane from Toronto. Our pilot over Sault Ste. Marie announced that because of the winds we would be flying a track much further north than usual. As we came up over Lake Winnipeg we were far enough north that one could see the entire north basin of Lake Winnipeg to Playgreen Lake and the location of Norway House. I was reminded of the fact that this immense body of water is no longer a lake in the true sense but rather, since 1976, it has been a regulated forebay controlled by the Jerpeg Dam located between the Indian communities of Norway House and Cross Lake.

The view from my window took me back some 12 years to a meeting I attended shortly after joining the Department of Indian Affairs. The meeting took place in April of 1974 at the Thompson City Hall. It had been called by the Province of Manitoba and Manitoba Hydro, and they had invited the Chiefs, Councillors and Trappers from the five Indian Bands, who were about to be subjected to the effects of a massive Hydro Project. The project involved the flooding of South Indian Lake, the diversion of the Churchill River and the regulation of Lake Winnipeg. Although construction had already been underway for almost two years and a government study board had been frantically working on impact studies, no discussions had taken place up to that point with the five Indian communities which were to be directly impacted by the project.

The physical setting of the meeting room was not unlike the banquet room we are in today. The government officials, scientists, and hydro representatives were seated behind tables on a raised podium just like those of us up here at the head table. The Indian leaders and other people of the communities were seated down below just like the rest of you.

Piled high on the tables were some sixty draft reports and technical studies which had been prepared by the Federal/Provincial Churchill, Nelson Lake Winnipeg Study Board. The meeting was extremely short. The officials told the people that all of the sixty odd reports were confidential. They said the reports were still in draft form and might be subject to misinterpretation, if they were released to non-experts. However, because the project was already under construction and could not wait for the completion of the final impact reports, the officials said they would be willing to provide the people with summary reports which they could read. If the people would come back to another meeting with any questions in two weeks time the officials would do the best they could to provide some answers.

Well, the people got mad and they didn't come back after two weeks. They went away and formed an organization called the Northern Flood Committee to represent their interests. Over the following two years, the communities had to raise the spectre of court injunction on three occasions to finally wrestle an agreement out of Manitoba Hydro and the Province. The suspicions created in the spring of 1974 still permeate to some degree the relationship between the five bands and the provincial government today. The sad story of the lack of planning embodied in this project and particularly the lack of respect for the Indian interest may be found in the pages of The Royal Commission of Inquiry completed in 1980, which was chaired by the Honourable George Tritschler former Chief Justice of the Court of Queen's Bench of Manitoba.

I want to contrast the Thompson meeting with another I attended some 7 years later in the spring of 1971 at the community of Fort Chipewyan. The purpose of this meeting was to enable the communities of the Athabasca Tribal Council to review the Alberta Oil Sands Environmental Research Program (AOSERP) findings which had examined the impacts of existing and proposed tar sands developments in the Fort McMurray area. On this occasion the meeting was co-chaired by Lawrence Courteille, who at that time was Chief of the Cree Band and Chairman of the Athabasca Tribal Council together with Dr. Andrew MacPherson.

In the sessions, which lasted over two days, while there was spirited debate between the Native, government, and scientific representatives there was also an underlying spirit of mutual respect. Elders and trappers were accorded a full opportunity to describe the changes to the environment which they had observed. The meeting may in part have helped to set the stage for the joint work in the Peace-Athabasca Delta, which Dr. Stuart Smith will be describing to you tomorrow.

The contrast between these two meetings illustrated to me that we have come at least some way in society, towards accommodating the Native interest; I am certain that many of you, whether you are Native or non-Native, may have encountered similar examples over the same period. The title of my remarks "at a turning point" is based on my belief there has been significant changes which present a new range of possibilities and approaches for the residents of many remote Native communities, to recover the rational relationship to the land which they once enjoyed. Such approaches must acknowledge both the vital stake as well as the inherent right of communities to have direct involvement in the management of the natural resource base throughout their hinterlands.

What is it you may ask that would make a bureaucrat like myself believe there are grounds at this point in time for such optimism, particularly given all that has happened over the last 40 to 50 years, or as others might say, all that has not happened? From my vantage point the factors that may potentially contribute to a breakthrough are several fold. First, it is necessary to acknowledge that with regard to aboriginal rights there have been major changes over the past four years both on the part of the Federal Government and some Provinces. This started with the Proclamation of the Constitution Act on 17 April

1982. As you may recall the Act protects existing aboriginal and treaty rights and ensured that these rights were to be defined through a later process. That later process is embodied in a series of First Ministers Conferences, the first of which took place in mid-March 1983.

Two subsequent First Minister's conferences held in March 1984 and April 1985 provided further opportunities for debate between the Prime Minister, Native Leaders and the Premiers, but did not result in a tangible Federal/Provincial/Native accord as was hoped. While there has been general consensus among all participants that aboriginal people should be given increased control over their own affairs, the key difference that remains is whether or not the right to aboriginal self-government should be entrenched in the constitution. The Fourth of the First Ministers Conferences is scheduled for the spring of 1987.

Although there is still much to be resolved on the Constitutional front, it is worthwhile I think, particularly if one holds hopes for a more rational community-based approach to renewable resource management, to reflect for a moment that many of the Native leaders who carried forward their people's constitutional concerns, to the eleven First Ministers, in 1983, 1984 and 1985 were the same people who ten years earlier in 1973, 1974 and 1975 were articulating in a variety of public forums their people's concerns about potential damage to their communities renewable resource bases that would result from a Mackenzie Valley Pipeline, a Diversion of the Churchill River, or the James Bay Hydro Project. We heard one of those leaders earlier today in the person of Bill Wilson.

This leads me to the second factor, which is quite simply a recognition of the tenacity and enormous effort that Native Communities themselves have put into the documentation and recounting of the reality of their unique relationship with the land, the water and the animals.

Of particular note has been their constant and emphatic reiteration of the fact that their communities are not just made up of a few scattered buildings grouped together in the wilderness, nor are they proscribed by those small artificial areas delimited by Indian reserve boundaries. Rather the community is that much larger area through which the people have moved back and forth for centuries according to the seasons, the location of kin, and the availability of the animals. Such areas are not measured in a few acres or hectares but rather in many instances they extend for hundreds of miles or kilometers.

The past fifteen years of intense pressure to develop non-renewable resources, as well as hydro electricity has largely been responsible for forcing the remote Native communities to publicly articulate their concerns for the protection of their renewable resource base. However, it should be acknowledged that in many instances the communities traditional renewable resource activities had already been severely disrupted years earlier as a result of government policies which had dictated that families had to stay put in one place to facilitate classroom education. An even more extreme measure was the Indian residential school which ensured that the children stayed put. Another factor was simply the administrative convenience that benefitted a growing Department of Indian Affairs in the post-war era. If your clients remained in settlements rather than following their traditional pursuits it certainly made the bureaucrats' jobs a lot easier.

This growth of a more formalized administrative structure ultimately separated many Indian people from their relationship with the land. While there has been some documentation of the impacts of this separation one of the most vivid and tragic printed accounts is to be found in the recent book by Anastasia Shkilnyk entitled "A Poison Stronger than Love" which is a documentation of the experiences of the people, at White Dog and Grassy Narrows in North Western Ontario. Such situations were not immediately

visible to the Canadian public at large, at least not until the rush of public hearings, that became a part of the push for major resource developments in the 1970's and early 1980's.

Because of the recent decline in world energy prices, the momentum to secure major resource development has over this past year and in an even more dramatic way in the last two months abated to a considerable degree. This pause perhaps offers for the Native Communities a breathing space to re-focus both their own attentions and the attention of governments to look at the community dimension of renewable resource management. Certainly a legacy of these last ten to fifteen years, of major resource developments includes a vast record of writings, transcripts, and other materials that deal with the issues of Native Communities and Renewable Resource Management.

In Chapter 2 of the second volume of "Northern Frontier, Northern Homeland", the report of the Mackenzie Valley Pipeline Inquiry handed down by Justice Thomas Berger in November of 1977, as well as the February 1980 report on the Alaska Highway Gas Pipeline Hearings in British Columbia entitled "Forgotten Land, Forgotten People" presided over by W. Winston Mair are found. In his letter of transmittal to the Honourable Mitchell Sharp, Mr. Mair stated "... the hearings provided the first opportunity for local people to express their thoughts and to be heard ... I was overwhelmed at the depth of feeling and strength of hope expressed before the hearings...". The legacy is also found in the eloquent testimony of the elders and leaders of the James Bay Cree in their appearances before Mr. Justice Albert Malouf of the Quebec Superior Court in late 1973. You will also find it in the submissions and the records of the Cree of Northern Manitoba impacted by Manitoba Hydro's flooding of South Indian Lake, the diversion of the Churchill River and the regulation of Lake Winnipeg.

Within your own province of Alberta examples of this legacy will be found in the interventions filed by the Tribal Chiefs Association and Cold Lake Band at the Energy Resources Conservation Board (E.R.C.B.) hearings in December 1978 as well as the interventions of the Athabasca Tribal Council and Fort McKay Band at Fort McMurray in May 1979. As you will recall those hearings were held by the E.R.C.B. to consider the applications for two multi-billion dollar proposed heavy oil and tar sands facilities.

In these and in dozens of other records of proceedings and journals from across Canada one will find cogent arguments by Native people for the application of renewable resource management; practices that would better take account of the skills, needs and wishes of Native people. One must therefore ask the question. If the concept of local control of renewable resource management is such a good idea why are there not many more examples of it taking place today? The answer to that question from my own perch quite simply put is the intrinsic lack of capacity of very large bureaucracies to effectively respond to the needs of small communities. Another impediment has been the chronic lack of sufficient funding over a long enough period of time to enable imaginative renewable resource projects to survive. In short unless, as Bill Wilson stated in his address to you earlier this morning, there is an enormous amount of collective will applied at all levels including the political, the bureaucratic, the scientific and at the community level, there is likely to be little meaningful change.

There are indications however that such a collective will may be forthcoming which accounts for both the optimism of my theme of being "at a turning point" and, as well, leads to a third factor which is the Federal Government's seriousness to follow through on the recommendations of the Special Parliamentary Committee on Indian Self-Government. These recommendations brought forward in 1983 by the Penner Committee were endorsed by all parties of the House of Commons. They stated that the Federal Government should

establish a new relationship with Indian First Nations and that an essential element of this relationship be the recognition of Indian Self- Government.

The Honourable David Crombie, Minister of Indian Affairs, has clearly stated that these recommendations constitute the major priority for the Department of Indian Affairs over the next several years. In opting for this approach, the Minister has selected a community-based approach which emphasizes that local government needs vary among the different bands across the country; that forms of self-government will depend on social and historical circumstances. For all Native peoples however, self-government answers two deeply felt needs; the right to make their own decisions based on their own priorities and policies and the right to preserve their cultural heritage.

The proclamation of the Cree Nascapi Act in July of 1984 was a significant achievement. This act is designed to provide the Cree and Nascapi of Northern Quebec with regional self- government, while ensuring they have the legal and financial resources to assume this responsibility. This latter point is critical to success. It is easy to assign responsibility but without the sustained resources to carry the tasks out it is meaningless.

From the perspective of your conference, it is important to note that there is a growing recognition in all quarters that the priority of self-government is meaningless, without a concurrent and sustained commitment to economic development. In the context of many Native communities, the only options for economic development rest in the realization of effective locally based renewable resource management programs.

In summary then, three factors that I believe have major significance for your discussions and deliberations at this symposium include the fact that Governments, both Provincial and Federal; the major Resource Developers; the Scientific Community and as well the public at large have been educated, to a considerable extent over the past ten to fifteen years by the Native Community about the need for a more sensitive and responsive approach to the management of renewable resources. A second factor I have touched on is the political strength and will that Native people have been able to exercise on an ongoing basis and which have been reflected in their participation in the resource development issues of the 1970's and more recently the three First Ministers Conferences on the Constitution in the 1980's which have dealt with Native issues. The third factor is the strong desire on the part of the Federal Government to meet the challenges set by the Penner Report on Indian Self-Government.

I submit that your symposium is taking place at a very critical time perhaps at "a turning point". My remarks opened with two specific examples and I would like to conclude with a specific example of Native involvement in renewable resource management. I do this at some risk, because I know that there are many in this room who are much more knowledgeable about this particular example than myself.

I would like for a moment to draw your attention to the outstanding results that have been achieved by the Beverly and Kaminuriak Caribou Management Board. The work of this Board has demonstrated how it is possible for local people, from 19 widely dispersed northern communities to effectively come together on an equal footing with the scientific community as well as provincial, territorial, and federal officials on a regular basis, with the common objective of sustaining and enhancing a renewable resource for the benefit of all. Established less than four years ago, already its example is about to be implemented in the Yukon with respect to the Porcupine Caribou herd and in Northern Quebec, with respect to the George River Caribou herd.

During its short existence, the Beverly Kaminuriak Management Board has gone well beyond the activities of just the management of the resource and undertaken a variety of other activities. These have included the preparation of highly imaginative educational teaching modules on the Caribou and its cultural significance to the people of the 19 member communities. These modules which are also produced in syllabics are of such quality that they are now being utilized in other schools far beyond just the 19 communities.

Another activity of the Board is the publication of an outstanding newsletter six times each year called the Caribou News. This is the main communication vehicle for the Board's activities and it also provides an excellent forum for the communication of views between Native caribou hunters, scientists, and government. In fact this newsletter is of such a calibre in terms of its layout, content, and particularly its humor that it is rumored that the Board is looking for a way to get the 400,000 Caribou to take out subscriptions to the Newsletter.

I would hope that the Alberta Society of Professional Biologists in a few years time might have a retrospective look at this years proceedings, and that rather, than just ideas in reports and a few exciting prototypical projects, you will be able to identify hundreds of examples where small communities across the country are playing a major role in the management of their own renewable resource base.

RENEWABLE RESOURCES, ECONOMICS AND NATIVE COMMUNITIES

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ABSTRACT: *This paper reviews the role that renewable resource harvesting plays in contemporary northern Native communities. It is apparent that the significance of the resources and harvesting activities extend well beyond the economic value these resources may possess. Indeed, resource harvesting activities should be considered of fundamental importance in maintaining the social vitality of communities engaged in subsistence pursuits. In this view renewable resource harvesting in Native communities relates more to questions of culture, lifestyle and community, than to questions of neo-classical economics. This explains why the terms "ethnocide" or "cultural genocide" are used to describe the severe disruptions caused by outsiders' activities that compromise Native harvesting activities. The paper concludes by suggesting why the continued sustainable harvest of renewable resources remains in the national interest.*

1.0 INTRODUCTION

My position on the topic of renewable resources and Native people is reflected in the title of my paper, chosen to emphasize that economic considerations are to be seen as only one aspect of the large part that renewable resources continue to play in the lives of many non-urban Native people, only one of the elements that interact to maintain the integrity of Native communities. Stated another way - renewable resources are important in far more than just economic terms.

My orientation or bias is inherently ecologic; that is, I am concerned to understand the various inter-relationships that exist between different parts of the community - where the term "community" refers to the total man and environment relationship. Clearly then, in rural areas, where people continue to harvest their own food from the land, concerns about the continued health of the environment will understandably be greater than in those communities in which this option is less feasible or where lifestyle changes, or occupational opportunities for the majority also preclude regular opportunity for wildlife harvesting. In any case however, I would not wish to minimize the importance - for psychological and cultural if not physiological and economic reasons - of the harvesting activities that do persist (Freeman 1985a; Looner 1986).

1.1 THE CULTURAL PERSPECTIVE

The theoretical perspective I represent is that of cultural ecology; if there is one message that anthropology can relay that is relevant to our discussions it is the lesson of cultural relativity. This tells us that as there are so many different cultures in the world, co-existing and allowing members of their respective societies to recognizably persist often through centuries of time, there is no point at all in trying to judge any one of these cultures by the standards of any other culture. To restate this proposition, one could say that there is no standard culture (certainly not our North American variety) by which others are to be judged and deemed better or worse. This is so obvious that I apologize for even making the statement, but I do so because it is apparently necessary that scientists in particular

remember that their scientific culture is not shared by everyone, and that their own scientific culture is very recent, very much a developing field in terms of human intellectual understanding. David Suzuki, known to all of us as a biologist as well as an educator and commentator, has referred on more than one occasion to the "arrogance" of scientists (e.g., Suzuki 1985) an arrogance born out of a culturocentric (indeed a Euro-centric) view of the world. In this view, not only are those who do not subscribe to the scientists's definition of the problem held to be somehow lacking in their understanding of reality, but even where these scientists have few solid facts to support their assertions, they still expect non-scientists to accept their opinions as if they were statements of fact. Alvin Weinberg, (when editor of the journal Science) referred to these opinions as being in the realm of trans-science, rather than science (Weinberg 1976). The fact is, of course, that some societies base their own understanding of how the world works on quite different theories and approaches to knowing, although often based upon similar careful observation of natural events. Scientists in fact have no monopoly on the truth, and of course spend much of their professional lives disagreeing with their fellow scientists and "proving" each other to be wrong. Scientists are no less trapped within their own cultural biases - in this case the culture is a scientific culture - than are other men and women. Their scientific culture gives them rather rigid ways of seeking new knowledge and new interpretations of the knowledge. Like most other elite groups in societies world wide, scientists (as "professionals") erect boundaries to both keep out threatening new ideas and to keep members of their culture on the straight and narrow path to revealed truth.

If we wish to examine the importance of subsistence food gathering from a culturally relative (that is to say, an anthropological) point of view, we can see how the culturocentric view of orthodox wildlife managers is not only at odds with Native resource users' understanding of the situation (e.g., Freeman 1985b, Usher 1984), but in fact - as the history of North American wildlife management tends to show - creates problems for all concerned, including inevitably the wildlife resources.

2.0 THE NATURE OF SUBSISTENCE

2.1 THE SCIENTIFIC PERSPECTIVE

The first problem is that Euro-Canadian society tends to view wildlife as an economic resource, and therefore resource harvesting as an economic activity. Wildlife management is full of notions that reflect this economic perspective. For example, the notion that animal populations should be utilized in a maximum (now "optimum") sustainable way or "waste" of the resource will occur. This parallels closely the capitalist view that in a rational economic system profits are to be maximized. Waste, or inefficiency in utilizing the best return on capital, is to be avoided. Those who maximize their return - and can continue to do so - are held to be behaving rationally, and those who don't should, in the interest of the system, be encouraged to change their strategies to conform to this preferred ideal.

2.2 SUBSISTENCE ECONOMICS

Anthropologists don't deny that renewable resources - fur, fish and game - when harvested have an important economic role to play. It is just that anthropologists, among others, recognize that not every society directs its economic behaviour toward profit maximization. Indeed, many traditional foraging societies (the hunting, fishing, trapping, gathering-based societies) produce merely to consume - not to accumulate for future investment in the fashion that industrially-based societies do with their economic assets. In

fact, in the so-called subsistence economies of hunting peoples, there are strict sanctions against surplus production that could lead to waste (e.g., Berkes 1981).

I should acknowledge that harvesting is not carried out in a way to produce just the amount needed for immediate personal or family consumption - surpluses can occur at anytime and often do, especially if the hunters or fishermen have coincident good fortune on a particular occasion. In such cases, the individuals so favoured convert their economic capital to social capital - by distributing the surplus production. Indeed widespread sharing and community feasting is a characteristic feature of all hunting and fishing societies. Moreover, in such societies there are values and sanctions to expressly guard against individual accumulation or hoarding of resources, and such societies have elaborate systems of kinship and social relationships which prescribe the channels along which the resources shall flow so that equanimity prevails in the face of the threat posed by unequal access to valued resources.

2.2.1 Social Goals of Subsistence

The purpose of nearly all so-called economic activity in such foraging societies is directed toward the reproduction of the social group. This of course contrasts quite markedly with capitalist societies' focus upon the individual rather than the larger society, where irrespective of whether the individual is a person, a family or a corporation, it is always only a small part of the society at large. However, it is reasonable to ask the question: How "traditional" or true to the earlier cultural values are today's descendents of former wholly hunting, gathering and fishing societies? It is quite true today that cash is an important part of everyday life, and that people need to obtain cash in order to sustain the hunting, trapping and fishing that they carry out. However, studies indicate that under such circumstances, people often adhere to a value system in respect to wildlife resources and other economic resources that is more similar to a traditional one than a capitalist one. For example, such resources are often viewed as being for immediate, rather than future consumption, and they are to be shared with the larger group rather than utilized for self-centered purposes. But equally to the point are the observations that in such situations, cash may be handled quite differently from wildlife resources and that different values may be held with respect to traditional and newly-imported resources. Furthermore, anthropologists are acutely aware of the tenacity with which people retain certain more traditional "core values" even when all outward manifestations may suggest that a rather massive material transformation in lifestyle and culture has occurred. Once again this indicates the complexity of the problem we are considering, and the danger inherent in an intuitive approach to understanding the processes at work.

2.2.2 Polar Bear Hunting: Canada and Alaska

The non-economic aspects of hunting can be illustrated by examining recent events that have been reported in regard to polar bear harvesting by Inuit hunters in the Eastern Canadian Arctic and in northern Alaska. Polar bears are an important economic resource: the skins fetch several hundred dollars each and quotas are in place in Canada to strictly limit the numbers of bears that can be harvested. As a general statement, one could say that under this management system every bear that can be legally taken will be harvested. However, hunters at two Baffin Island communities in 1985 expressed concern about a perceived reduction in the local bear population - a reduction corroborated by the results of scientists' studies of the regional bear population (see Lloyd, this volume). As a result of this changed circumstance the two communities voluntarily decided to significantly reduce the size of the quotas available to them: from 45 bears down to 15 in one community, and from 22 down to 10 bears in the other. I should add that the community reducing its bear harvest by 67 percent, is one of the Inuit communities that has been economically devastated by the European boycott of sealskins, a community that can least afford any further reduction in its economic circumstances. In similar fashion, equally challenging to

a neo-classical economic interpretation of wildlife resource values, comes this recent report in regard to Inupiat hunters at one Beaufort Sea community in Alaska:

"Little directed effort is expended to hunt (polar bears) although they are killed when the opportunity arises, and those taken are utilized for numerous purposes. Polar bears are occasionally abundant near some settlements, especially Kaktovik. The hunters at Kaktovik take fewer bears than they could, frequently not molesting bears that enter or appear on the outskirts of that village" (Burns 1985).

Clearly any analysis of the contemporary resource harvesting system that views renewable resources in a narrow economic sense is going to find the approach inadequate at many turns. Yet, elsewhere we read that the Alaskan North Slope hunters estimate the value of a bowhead whale at \$500,000, and of each caribou at \$1,000 (Burns 1985). Does this not suggest modern day Inuit hunters are valuing renewable resources in largely economic terms? Not at all; the value of caribou, or bowhead, and indeed of whitefish, ducks and ptarmigan, is as a resource whose continued exploitation allows reproduction of the social relations, the values and the distinctive cultural identity of the North Slope Inupiat. The dollar values are admittedly questionable; they are merely assigned to make an effective point with non-Native audiences who can more readily understand valuations stated in dollar terms.

2.2.3 The Bowhead Whale Example

The subsistence hunting of bowhead whales in several Alaskan Inupiat and Yupik communities today has a history going back for centuries. However, the influences of modernization have been experienced in the region since the days of the nineteenth-century North Pacific and Western arctic commercial whaling. Yet, despite this, and the recent influx of monetary wealth to the region following the discovery of oil at Prudhoe Bay and passage of the Alaska Native Claims Settlement Act in 1971, the North Slope coastal Inupiat proudly refer to themselves as "The People of the Whale" (see Worl 1980).

Notwithstanding the Inupiat and Yupik communities' long and uninterrupted long history of dependence on the bowhead whale, efforts have been made by outside groups in the past decade to disrupt this relationship -- a result of mounting international concern over the impact of continued hunting on a severely depleted whale stock.

In order to investigate the claim of the Alaskan subsistence hunters that despite these recent modernizing changes to their lifestyle and society, bowhead whales are still "needed" by them, the International Whaling Commission undertook a study of the bowhead-subsistence whalers' contemporary dependence upon whales. This study (IWC 1982), sought to elucidate the relationship between the hunting of bowhead whales and several important institutions which structure contemporary Inupiat/Yupik society and ensure its maintenance and distinctive identity. Figure 1 shows in diagrammatic form these interrelationships, and the extent to which the hunt (in its several component parts) sustains -- and in turn receives reinforcement from -- these social institutions.

Table 1 on the other hand, indicates that other marine resources are unable to provide adequate replacement for the bowhead whale in respect to these important events (see also, Marquette and Braham 1982). This once again indicates the need for sensitive and detailed understanding of the nature of renewable resource use when making appropriate management decisions in a cross-cultural situation.

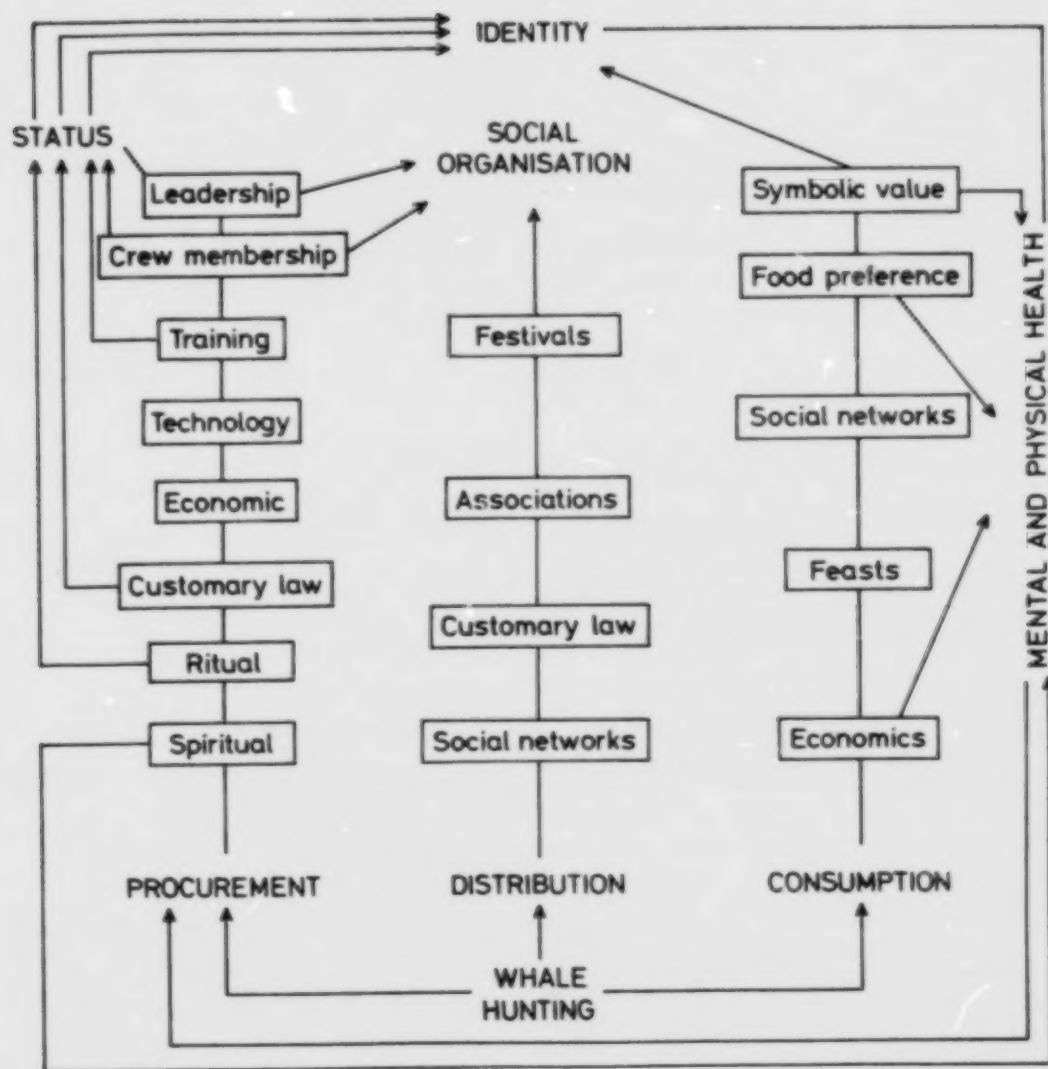


Figure 1. Relationships existing between social organizations and bowhead whale hunting (IWC 1982).

Table 1. Relative social and cultural significance of marine mammals in contemporary north Alaskan whaling communities.

	Bowhead	Walrus	Ringed and bearded seals	Beluga
Economic	4	1	1	1
Law	5	3	3	4
Skill/knowledge/training	5	4	5	4
Technology	5	4	3	4
Ritual	5	3	2	1
Ceremonial	5	1	1	1
Spiritual	5	3	1	1
Crew membership	5	2	2	2
Associations	5	1	1	1
Festival	5	1	1	1
Social networks	5	3	2	2
Feasts	5	1	1	1
Symbolic	5	2	1	3
Food preference	5	2	1	3
Leadership	5	2	2	2
Scores	74	33	27	31

Scale
Weak (or not at all) Strong
1 2 3 4 5
contribution to/involvement in each activity

3.0 SOME CONCLUSIONS

3.1 BASIS OF TRADITIONAL MANAGEMENT

Any society which has a profound and continuing dependence on a set of resources for its future as well as present well being, is logically bound to have a strong self-interest in managing those resources in the best way possible. This is more especially the case with those particular resources whose manifold attributes are imbedded in the history, the myths, the symbols, the religion and the very identity of that society.

3.2 CONCERN FOR HABITAT PROTECTION

It follows that any threat to the continued well being of such valued resources represents a direct and serious threat to every member of that society. In fact, the very means by which that group of people seek to perpetuate their identity and sense of community, and to ensure a knowledgeable future for their children, is under direct attack. Such an attack is seen to be in progress if the habitat upon which the wildlife or fish resources depend is unduly threatened.

Given the ecologic realities of the north, such threats are real and troubling even when at a distance from the community's harvesting areas.

3.3 HUMAN RIGHTS ISSUES

I believe it follows from what I have said that where such resources are being harvested and otherwise managed in a rational (i.e., sustainable) fashion, then any imposition from outside interfering with these harvesting activities represents a denial of basic human rights. Canada, together with other member States of the United Nations is a signatory to the 1948 Universal Declaration of Human Rights which states that all people are equal in dignity and rights, and should act toward one another in a spirit of brotherhood. The Declaration asserts that the community is to be preserved, for only in such a setting can the full development of the human person be attained. In 1976 the member states of the United Nations went further, and signed the International Covenant on Economic, Social and Cultural Rights. This covenant asserts that there is a right to health (not just to life, but rather to an assured quality of life). As the laws of civilized states are there to protect the individual's legitimate desire for dignity, security and personal well being, any groups that oppose such legally-protected goals are outlaws, and their actions seemingly lacking in legal or moral substance. Such outlaws include the several urban-based groups who oppose sustainable utilization of wildlife resources by Native (and non-Native) harvesters. These groups, whose self-interest would deny basic human rights and self-determination to their fellow men should surely be repudiated by people of good will and understanding.

With respect to the sustainable utilization of renewable resources, within a few weeks of this conference, many nations of the world will meet in Ottawa to endorse (perhaps in modified form) the World Conservation Strategy. I would remind you of one of the articles (WCS:7.6) of that convention especially relevant to our discussions here. I quote:

"Where a community depending for subsistence wholly or partly on living resources effectively regulates utilization so that it is sustainable, its regulatory measures should be supported."

Other speakers at this conference will speak to these Native regulatory measures, and indeed there is a growing literature describing such effective renewable resources management systems in hunting and fishing societies around the world (see papers in collections edited by Cordell 1985, Freeman 1981, Lasserre and Ruddle 1983, Morauta et al 1982, Ruddle and Akimichi 1984, Ruddle and Johannes 1985, Williams and Hunn 1982).

3.4 THE NATIONAL INTEREST

In conclusion, I would like to state that sound management of fish and wildlife resources and habitat in the northern regions of our country is not just in the interest of the region and the communities found there - but is clearly in the national interest. A country's health and its self-image, as well as the evaluation others elsewhere place upon it, depends upon the health of all the country's regions. It is therefore very much in a nation's self-interest to promote vibrant self-sufficient communities, not only in the industrial and urban centres, but also throughout the countryside and at the periphery. In Canada, the vast expanses of the mid-North and the Far North are occupied by communities of people, some of whom in historic times have exploited renewable, and non-renewable resources. The non-renewable resource-based communities are temporary, usually there for short and uncertain periods of occupation. Their eventual demise brings hardship to many families. Renewable resource-based communities can, and usually do occupy these regions for indefinitely long periods of time and can thereby promote a sense of security, self-sufficiency and sustainable progress in their members, all of which I repeat, is clearly in the national as well as the regional and community interest.

We in the urban centres should do all in our power to support -- not oppose, or remain indifferent to -- the circumstances of these northern societies. Their long-term occupation of our sparsely settled boreal forest and arctic regions gives true substance to our claim of national sovereignty over vast territories that we in the south scarcely comprehend yet proudly insist give a distinctive strength and uniqueness to our national identity.

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OBSERVATIONS FROM THE TRAPLINE

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ABSTRACT: *The controversy over seal harvesting is reviewed in retrospect and parallels to the trapping industry are drawn. There are lessons here for biologists, for managers, for diplomats and for political leaders. In the wake of the anti-sealing debate, the renewable resource economy of many coastal communities in the Northwest Territories is in tatters. Is the same in store for the trapping industry? Characteristics of a serious trapper are described. Lifestyle alternatives are questioned. It is argued whether Canada still has room for the subsistence lifestyle where output is measured in social terms or whether all productive activities that have a monetary dimension should be measured in strict economic terms. The survival of the wild fur industry demands co-operation among trappers, biologists, managers, Canadian trade consulates, and political leaders. Trappers must be ready to adopt new harvesting techniques. Biologists and managers must develop scientifically based furbearer management programs. Political leaders must understand harvesting and management regimes. They should not shrink from defending and encouraging them. Canadian embassies and trade consulates must explain that the wild fur industry in Canada is an honourable occupation that blends the best traditional skills and an understanding of nature with modern wildlife population management and conservation.*

I have been involved with the hunting and trapping industry for more than thirty years. In my present position as the Chairman of the Fur Institute of Canada and Deputy Minister of the Department of Renewable Resources, I am reminded daily of the vulnerability of the traditional economy of hunting and trapping. As well, I have watched with interest as Native people in Canada have gradually blended the concepts of modern management with their own understanding. Thus, I was particularly pleased to learn that the Alberta Society of Professional Biologists saw fit to host a symposium on the subject of Native People and Renewable Resource Management.

We have a large staff of biologists working in our government and I have day to day contact with these individuals. I think that they have learned from me, as I have learned from them. During the past five years, I have had several experiences which have emphasized the need for scientific research which is not only world class, but which is recognized as world class by all concerned.

The purpose of my paper is to describe to you some of the effects of the Animal Rights Movement and suggest some ways that professional biologists can assist in ensuring a more balanced approach to the conservation of our natural resources.

1.0 MANAGEMENT OF WILDLIFE IN THE NORTHWEST TERRITORIES

I would like to comment on the management of wildlife in the Northwest Territories in order to put my subsequent statements on the impact of the Animal Rights Movement into context.

As Deputy Minister I can assure all of you that my department is committed to the conservation of our natural resources and that we are conscious of the national and international interest in these resources. We support the world conservation strategy and our policies and programs clearly demonstrate this. I invite you to examine our management plans.

I am convinced that those people who are most likely to stand up and defend wildlife and wildlife habitat are those who have the greatest interest in its conservation. In the north these are primarily the people who depend on wildlife for a living and who realize that their children must have the option of participating in the traditional economy. In some cases, Native people are not only the most likely people to defend natural values but are in fact the only people who will do so. We have several situations where wildlife populations are large enough to satisfy the national and international interest but where our species management plans call for larger and more productive herds which can sustain the demand for subsistence harvest.

Some examples of this are the management of wood bison, muskox and barren-ground caribou. We developed a management plan for wood bison, which described a population increase from 16 animals in 1963 to more than 1500 today. The unanimous response from northern communities was to continue to prohibit hunting and allow the herd to grow and perhaps colonize additional areas. Clearly there could not have been a more conservative response from the public.

Hunting of muskox is permitted under quota in the Northwest Territories. Muskox have shown a tremendous recovery from the late 1800's and this recovery is the result of conservative management.

The four mainland Northwest Territories caribou herds roam freely through an unspoiled wilderness and now number more than 800 thousand animals. The recruitment of yearling caribou to all of these herds in the 1980's has exceeded 15% per year. Our management plans call for ongoing stewardship which may result in even larger herds.

Native people in the Northwest Territories have clearly shown that they favour a conservative and cautious approach to the development of non-renewable resources like oil and gas. Some of the strongest submissions to review processes like EARP (Environmental Assessment and Review Process) have come from those whose livelihood is threatened. We would like to see economic development but we are committed to a balanced approach.

2.0 IMPACT OF THE ANIMAL RIGHTS MOVEMENT

The impacts of the Animal Rights Movement is particularly pronounced in the north where Inuit, Inuvialuit, Dene and Metis attempt to maintain a balance between traditional lifestyles and the modern wage economy.

Hunting cultures are unique and are in danger of extinction. To be a hunter is to be independent, self-reliant and to possess skills that people from non-hunting cultures do not understand.

We have witnessed the impact of the decision of the European Economic Community to ban the import of sealskins. The Anti-Sealing Campaign has never focussed on ringed seal and the organizations have never singled out Native harvesters. The campaign, however, has destroyed an entire industry. There have been significant losses to the coastal Inuit of the Northwest Territories. The value of sealskin sales in the Northwest Territories fell from \$890,000 in 1980 to \$76,000 in 1983 (Table 1). In the same period, social assistance payments increased in most coastal communities. There were fewer seal skins traded in 1983 than at any time since 1961.

For Inuit seal hunters, the loss of the seal market means that they are now unable to afford to hunt for food. In many cases, the sale of seal pelts used to pay for hunting trips that provided meat for communities. With the closure of the seal market, Inuit seal hunters are having difficulty financing their hunting trips.

The economy of hunters and trappers in the Northwest Territories is not much above the poverty level. Elimination of the opportunity to gain a livelihood from the land can have several kinds of unfortunate side effects. With the loss of income often comes a loss of self-respect, pride and dignity. I have personally witnessed sad circumstances where idleness and poverty have combined to cause family breakdown, child abuse and alcoholism. These situations often deteriorate in a vicious spiral which is extremely difficult to recover from. Social assistance programs are an unacceptable substitute for traditional lifestyles, as they simply encourage dependency.

The cultural costs of the loss of the seal hunt are harder to pin down, but are perhaps more important. Within the activity of Inuit sealing is a sharing custom which serves to establish and reinforce relationships among people in the community. Sharing functions to strengthen the understanding that the people are very much a part of the ecosystems which they live in. However, as the ability of Inuit to participate in ringed seal hunting is constrained, this reality and an essential part of the Inuit culture will fade away.

Recent events in the oil patch have demonstrated to Albertans in particular and Canadians generally what happens to people when there are major changes in the market for export products. Trappers have lived with the ups and downs of the global fur market for many many years. The sealskin market is not like the oil market where the price is down because of an over supply. The price is down because sealskin producing countries could not convince importing countries that our resource management programs are biologically sound and morally responsible.

I attended the 1985 meeting of the Convention on International Trade in Endangered Species Convention in Argentina on behalf of the Fur Institute of Canada. From my preceding comments you can probably appreciate the anger and frustration which I experienced as other nations made value judgements about situations which they knew little about. In the wake of the collapse of the seal market and the drop in value of furs like arctic fox, we unsuccessfully attempted to maintain a new potential for a modest export of gyrfalcons; a resource which is certainly not endangered in the north.

The Animal Rights Movement has had serious effects on the economy of hunters and trappers in the Northwest Territories. At the moment, however, I am more concerned with the further damage which might occur. I have heard that other nations are considering

Table 1. Northwest Territories Sealskin Statistics (1961 - 1984).

Year	Number of Pelts	Average Price	Total Value
1961-62	10,407	4.65	48,685.50
1962-63	27,884	8.49	236,735.16
1963-64	46,962	14.78	691,706.50
1964-65	68,332	11.08	757,118.56
1965-66	51,197	5.97	305,646.09 ^a
1966-67	46,355	6.82	316,141.10 ^a
1967-68	19,460	3.80	73,948.00 ^a
1968-69	27,479	7.68	211,038.72
1969-70	31,185	8.64	269,384.72
1970-71	37,282	9.22	343,832.24
1971-72	30,819	9.81	302,334.39
1972-73	26,363	15.10	398,081.30
1973-74	36,391	17.36	631,747.76
1974-75	40,468	17.10	692,002.80
1975-76	34,270	23.65	810,485.50
1976-77	48,407	16.99	822,434.93 ^a
1977-78	26,726	11.86	316,970.36 ^a
1978-79	29,352	14.16	415,785.45
1979-80	30,860	19.05	588,022.74
1980-81	42,120	21.13	890,278.16
1981-82	24,512	19.42	476,134.70 ^a
1982-83	14,837	14.86	220,590.50 ^a
1983-84	7,689	9.95	76,555.50 ^a

^a Sealskin prices dropped dramatically during these periods as a result of anti-sealskin campaigns.

proposals to the 1987 CITES meeting to further restrict the legitimate use of the world's natural resources.

3.0 DISCUSSION

If we were to follow the extreme views of the Animal Rights Movement, then we would cut our ties with nature. To me, the consequences of this can be nothing short of disaster. Increasingly we are separating ourselves from nature in our headlong rush to dominate the earth and contaminate our clean water, clean air and clean land. In the end, this must mean that we ignore the ecological principles which govern life as we know and respect it.

The fur industry today is in a similar position to the position the seal industry was in during earlier days. The government was not successful in its efforts to protect the industry even though there was convincing scientific data to support its cause. Clearly, government cannot handle the current threats single handedly. The battle to ensure a balanced approach to the management of renewable resources will require cooperative efforts among biologists, wildlife managers, and political leaders from both government and Native organizations.

I would like to conclude my comments to you today with some suggestions for professional biologists to consider:

1. First, I encourage you to examine the animal rights issue carefully. In particular, I would like you to consider the idea that if we do not use our natural resources, we will lose them. We must use them wisely and we must use them within the limits of sustained yield, but if we don't allow the use of wildlife we stand in danger of losing contact with the natural world and of reducing the value of the heritage we were entrusted with.
2. Second, I encourage you to consult with local people during all phases of your research. These people may ultimately be the most affected by your work. In many cases the local people may be able to contribute to your understanding of the species which you are studying.
3. Third, I support the ongoing efforts on the part of biologists to improve the accuracy and reliability of surveys. Wildlife research must not only be of high quality but must be seen as high quality. To this end I support the concept of an Association of Professional Biologists and I suspect that, with time, it will gain the same credibility as an Association of Professional Engineers or Foresters. Further, the development of recognized standards for biological surveys could enhance the credibility of your work. In the arguments which take place in the international arena it is often sufficient for protectionists to simply sow seeds of doubt that some piece of research is faulty. Recognized standards of excellence in biological research could go a long way towards neutralizing the arguments of extremists.

4.0 CONCLUSION

To conclude, I would like to thank the Alberta Society of Professional Biologists for inviting me to this Symposium. The future use and management of renewable resources will depend to a large extent on the quality of your research and the recommendations which you make for management.

For generations Native people have been a part of North American ecosystems and for generations we have depended on renewable resources. That is not going to change. Native people in Canada have certain rights and privileges and we will maintain a strong interest in the sound management of our natural heritage.

NATIVE ROLES IN MONITORING OF ENERGY DEVELOPMENTS

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ABSTRACT: *Native communities have argued for a strong role in the monitoring of the effects of energy development in the Canadian North for a number of years. Native people have been hired by the oil companies to act as surveillance monitors on seismic operations and to act as polar bear monitors for offshore drilling activities. However, the communities have had little say in the design and conduct of monitoring programs to assess the effects of oil and gas development. It is clear that this is changing. A recent program to monitor the socioeconomic effects of development was rejected by the communities because they had had little role in the program. This paper looks at recent monitoring programs that had participation from the communities in the Mackenzie Valley, Great Bear Region, the Mackenzie Delta and the Beaufort Sea. After assessing the current situation, the paper suggests future opportunities for increased Native participation in monitoring.*

1.0 INTRODUCTION

Northern Native communities have expressed a common desire to be involved in any monitoring that is directly or indirectly related to resource development and renewable resource management. This is fortunate for those who are currently trying to mount monitoring programs and have come to realize that the full cooperation of the local people is essential. Most obvious current examples are resource harvesting studies where hunters and trappers are (will be) asked to report voluntarily in some instances on harvest levels, effort levels, and harvesting locations. Unfortunately, participating as sources of information in a harvesting study, is not the sort of involvement local Native communities seek. They wish to be involved in the design, collection, and analysis of the monitoring information. Some view this desire with skepticism, emphasizing the risks in giving a local community too much control over the monitoring programs. We view this as an opportunity, and encourage those responsible for mounting and funding monitoring programs to take advantage of this desire.

This paper looks at recent monitoring programs that had participation from the communities in the Mackenzie Valley, Great Bear Region, the Mackenzie Delta, and the Beaufort Sea. After assessing the current situation, the paper suggests future opportunities for increased Native participation in monitoring.

2.0 PAST EXPERIENCE

Native communities have argued for a strong role in the monitoring of the effects of energy development in the Canadian North for a number of years. In the past, Native people have been hired by the oil companies to act as surveillance monitors on seismic operations and to act as polar bear monitors for offshore drilling activities. However, the communities have had little say in the design and conduct of monitoring programs to assess the effects of oil and gas development. It is clear that this is changing.

2.1 RESOURCE HARVESTING STUDIES

Native harvest statistics are counts, or estimates, of the number of each species of fish and wildlife taken over a specified period of time, in a specified area, by a particular group of Native people (Usher et al. 1986). In their evaluation of methodologies for counting and estimating Native harvests, Usher et al. (1986) concluded among other things that:

1. Recall surveys of the type undertaken to date in northern Quebec and the Northwest Territories are for most species the only feasible method for enumerating harvests. These are sociological, not biological surveys, since they are based on information provided by people, not animals.
2. Since harvesters themselves are necessarily the source of this information, effective surveys require their willingness to participate, and accordingly a substantial measure of trust and cooperation by all participants.

2.2 MACKENZIE ENVIRONMENTAL MONITORING PROGRAM

The Mackenzie Environmental Monitoring Program (MEMP), begun in 1985, was undertaken to recommend a scientifically defensible monitoring and research program that will address the potential impacts of oil and gas development in the Mackenzie Valley and Delta (LGL Limited et al. 1986). While MEMP is primarily a biophysical monitoring program, it also has a substantial resource harvesting component. In the MEMP, the effects on the resource of a harvesting system are represented by a set of impact hypotheses (c.f. Everitt et al. 1985) composed of the casual relationships that link oil and gas activities with valued ecosystem components. This set of hypotheses taken together represent a systematic view of the potential cumulative effect on resource harvesting of oil and gas development over space and over time.

The inclusion of a resource harvesting component meant that the Native northerners had to have a strong voice in MEMP. Native people from northern communities in the Mackenzie Valley, the Great Bear Region, the Mackenzie Delta, and along the Beaufort Sea had considerable influence over the direction taken by the project and in development of the impact hypotheses. Two very strong messages were presented by the Native representatives in MEMP. The first is that the communities view most resource harvesting issues in a species specific and a site specific way. The second is the communities desire to participate in any monitoring that results from MEMP.

During MEMP, it became clear that trained scientists and Native communities have differing views about what constitutes a significant effect. A careful review of all the MEMP hypotheses will show that those hypotheses not concerned with harvesting are species specific and look at regional impacts; and the resource harvesting hypotheses are not species specific but are concerned with community level effects. Most of the hypotheses that look at the direct effects on fish and wildlife are unconcerned with local effects that do not have an effect at the population level. However, it is local effects that are of prime concern to a community. What this shows is that monitoring to determine the effects on resource harvesting must be community based. For resource harvesting, local effects are all important.

2.3 MONITORING THE NORMAN WELLS PROJECT: A DENE VIEW

Dene opposition and criticism of the Norman Wells Project is well known. When it became clear that the Project would be approved, the Dene argued:

"That a Monitoring Agency be established with Dene participation and funding provided to the Dene by the government of Canada; and that the Monitoring Agency be given the authority to enforce compliance with rules, regulations, and agreements required to minimize impacts and protect or improve the environment." (Dene Nation 1981, quoted in Fee Yee, 1985).

The Monitoring Agency was not established but the Dene through their own research and political action, plus cooperation from the Department of Fisheries and Oceans (DFO), have succeeded in having a small role in the ongoing post-construction monitoring with respect to oil spill contingency planning, fish studies, and water quality monitoring (Fee Yee, 1985). This role is voluntary and nonregulatory and largely unrecognized by Indian and Northern Affairs Canada (INAC) and the National Energy Board which are the two major regulators on the Project.

2.3.1 Contamination of Fish

Since 1983, the occurrence of fish with black, stunted livers, internal tumours, blood spotted eggs, small size and soft water flesh have been documented by the Dene and DFO. However, it is still not clear whether the problems with fish downstream of Norman Wells (at Fort Good Hope and Arctic Red River) are connected with the Norman Wells Oilfield expansion.

Initial documentation of the problem was done by the Dene. DFO took samples at Fort Good Hope in the fall of 1983. By 1985, recognition of the seriousness of the concern led to a full fledged study funded by INAC using Northern Oil and Gas Action Program funds and by DFO. This study began in April of 1985 includes a detailed sampling of socio-economic information and fish related information from fishermen and community residents (Fee Yee 1985).

3.0 CONCLUSIONS

The above discussion leads to a number of conclusions:

1. Northern communities want to play a significant role in monitoring. The role they envision encompasses design, collection, and interpretation. Not only do they wish the monitoring to be done; they wish to do the monitoring.
2. It appears that northern communities have the ability to undertake monitoring and can establish workable relationships with government agencies.
3. Northern communities may be the best source of information on what the effects are likely to be and what monitoring priorities should be.
4. For many kinds of data, in particular harvest statistics, the Native people are the best if not only data source.
5. The collection of data from the Native people requires that trust and cooperative relationships be developed.
6. Many of the concerns with respect to resource harvesting are of a local nature whereas many of the scientific concerns are of a regional nature.

7. The collection of resource harvesting data should be considered as socio-economic monitoring.

4.0 POSITIVE STEPS - FUTURE PROGRESS

The efforts of the Dene and the substantive participation of the northern communities in MEMP have demonstrated that the Native people have a role to play at all stages of environmental monitoring for energy developments. As stated above they are the best people to identify priorities for monitoring, the best people to collect harvest statistics, and they are the best people to monitor for local effects.

The question remains how can we increase Native participation in monitoring programs. Durst (1985) in his critical review of the community based participation in the NOGAP social services database study points to a number of problems. These ranged from travel time and cost to the limited attention people in the community can devote to the activity.

Durst also recommends that honest and realistic objectives be established, that personal contact is essential, and that early efforts should be considered development. He seems to be arguing that credibility and trust need to be established by working in the communities with the people.

The experience with MEMP shows that Native people should be involved right from the start in the design of the program. There are two reasons for this. First, success of the monitoring will likely depend on Native cooperation; early involvement is a test to ascertain the degree of cooperation to be expected. Second, Native involvement is a valuable source of information on monitoring priorities.

Northern communities should be given contracts to undertake surveillance and local effects monitoring. Native groups should undertake surveillance monitoring programs for those energy development activities that have direct effect (e.g., seismic activity) on the land and its resources. Monitors should be responsible to the community and not the development companies as is currently the case. While monitoring to determine the local effects may require scientific expertise, the community should direct the programs. It needs to be emphasized that data from scientific sampling projects is only one source of the information available on local effects. The people themselves are often the most effective monitors because they are present at all times.

The role of Native groups in monitoring programs designed to determine the regional effects is less clear. Many of the regional programs are concerned with determining effects at the population level for important fish and wildlife species. Native groups are at no particular advantage or disadvantage when it comes to mounting these programs. It seems likely that the conduct of programs to look at the regional impacts will likely remain in the domain of the scientific community, particularly those concerned with wildlife management. However, the role of the Native groups will be in setting the scope and priorities of these programs. This too may change dramatically in the near future as Native control of wildlife management increases as a result of land claims.

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JAMES BAY CREE INDIAN MANAGEMENT AND MORAL CONSIDERATIONS OF FUR-BEARERS

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ABSTRACT: *This paper reviews recent research on the use and management of fur-bearer populations by contemporary James Bay Cree hunters, and on the continuities and changes in their traditional systems of knowledge, territoriality and wildlife management. How James Bay Cree hunters collect information and evaluate their traditional hunting knowledge is summarized, based on Cree statements. It is shown that traditional knowledge is based on many of the same indicators of the condition of game populations as are used by wildlife biologists. Data on actual Cree hunting practices are evaluated using data from the results of biological surveys, work diaries, and harvesting questionnaires. The importance of the Cree system of hunting territories, and of Cree conceptions of the moral bonds between men and animals, are emphasized. It is argued that the Cree pass on their hunting management knowledge through a continuation of the traditional cultural and territorial organization of hunting, an organization which has gone through historical change and threats to its continuity. The James Bay and Northern Quebec Agreement (JBNQA) was intended to aid the Cree to reproduce this organization, and to manage the game populations more effectively. However recent threats to the continuity of these practices are noted in the post-JBNQA period.*

1.0 INTRODUCTION

There are clear relationships between the interests of biologists on the one hand, and the interests of Native hunters on the other. Wildlife management always involves social policy making as well as wildlife and habitat manipulation, and it therefore requires both biological and socio-cultural knowledge. Native peoples have long recognized the dependence of their own distinctive cultures and social systems on extensive access to and maintenance of the biological milieu, an awareness attested to in both the continued existence of the wilderness areas of northern Canada to the present day, and in the struggles by Native peoples to preserve those environments.

Nevertheless, despite these obvious relationships, cultural differences and political polarizations have tended to separate the two groups with the greatest interest in the management and conservation of the northern environment, namely the government-mandated wildlife managers and the Native peoples. And similarly splits have developed between these two groups and sectors of the environmental movement. The result has not only been a limiting of the effectiveness of each, but also the creation of conditions in which each tends to operate with insufficient and often inaccurate information about the knowledge, practices, goals and degrees of success of the others. Anecdotes about other groups prevail where dialogue and the exploration of common causes are needed.

As a social scientist and an anthropologist, I find myself outside each of the major groups of actors in this drama, but also drawn by profession and personal commitments to each. I have thus been at various times, a student of the James Bay Cree hunting society,

and activist in and researcher of the environmental movements, and historical researcher into the development of wildlife management practices in Canada.

What I will try to do today is to indicate how social scientists have attempted to get away from the caricatures which predominate the images each group has of the others, and to renew the examination of basic questions about the knowledge, capabilities, and interests of each group.

The focus of the present paper is a study of the cultural ecology of a group of sub-arctic hunters, the Waswanipi Band of James Bay Cree Indians. It compliments an earlier paper on North American Native hunting and management of moose by focusing on the use and management of beaver populations, and in some sections both draws on and extends the conclusions of that earlier paper. The paper has three sections: an account of the system of Waswanipi Cree knowledge and ethics related to beaver use and management; an analysis of actual Waswanipi practices and their consequences; and an analysis of the processes and problems in the history of Waswanipi knowledge and practice over time.

The Waswanipi Indian people number approximately 1000 and live at a community on the Chibougamau-Senneterre highway, in northern Quebec, at 49° 45', 77° 45'W. Nearly all active adults participate in hunting activities on a seasonal basis, and approximately 40% of the population hunts as its major activity on an annual basis. In winter, and to a lesser degree in summer, most active hunters live dispersed among 40 to 50 isolated bush camps, spread over approximately 35,000 sq.km., where most wildlife harvesting is conducted. The fieldwork on which these data were primarily based were gathered from 1968 to 1971, and they were updated and re-analyzed based on additional fieldwork from 1981 to 1984.

2.0 WASWANIPi SYSTEMS OF KNOWLEDGE AND ETHICS

I studied Cree knowledge of beaver and beaver hunting by recording how hunters talk about their hunting practices and experiences. There were four major sources of statements by Cree: general discussions of how to hunt beaver; descriptions of specific hunts; discussions about the words and expressions which are used in the Cree language to talk about beaver hunting; and participation in casual everyday conversations.

At a first level of analysis I compared Cree knowledge of beaver physiological, behavioural and social adaptations to their environment with the currently available knowledge within the Western scientific tradition, and found a general coincidence of reported adaptations; although the Cree account and the Western account often differed with respect to the explanation offered, as I will indicate below. A detailed recounting of these comparisons is beyond the scope of the present paper, nevertheless a number of examples will be cited in the analyses presented below. These comparative studies indicated that there are Waswanipi concepts that have close analogies to the Western scientific concepts of: systemic relationships between various components of the natural world; sustained yield harvesting; and management by iterative steps which approach a goal.

2.1 ETHNO-ECOLOGY

In order to analyze Cree hunting I have to describe a specific culturally ordered image of the world in which the Waswanipi live and hunt, their ethno-ecology. Waswanipi hunters say that they only catch an animal when the animal is given to them. They say that in winter it is the spirits, especially the north wind, God and the animal spirits themselves

which give animals so the hunters and their families will have what they need to live and survive. In the culturally constructed world of the Waswanipi the animals, the winds, and many other phenomena are thought of as being "like persons", in that they act intelligently and have wills and idiosyncrasies, and understand and are understood by men. Causality in the Waswanipi world is not mechanical nor biological, it is personal.

The body of the animals a hunter receives nourishes him, but the soul returns to be reborn again, so that when men and animals are in balance, the animals are killed but not diminished and both men and animals survive. The balance is reciprocal, and in return for the gifts, the hunter has obligations to the animals and the spirits to act responsibly, to use what is given completely, and to act respectfully towards the bodies and souls of the animals by observing the highly structured procedures for retrieving the animal, butchering it, consuming the flesh, and disposing of the bones and remains. It is expected that men will kill animals swiftly, and avoid causing them undue suffering. It is also stated that men have the skill and technology to kill many animals, too many, and it is part of the responsibilities of the hunter not to kill more than he is given, not to kill animals for fun or self-aggrandizement.

Such a cultural view of the world must initially strike most non-Native people as odd, or worse as gratuitous, but it will be an aim in this paper to indicate how the Waswanipi concepts inform both the sophisticated practices, and also an ethically sensitive relationship of responsible action between men and animals.

2.2 HUNTING ECOLOGY

2.2.1 Hunting Methods

The practical task of establishing human-beaver encounters is complex because beaver are nocturnal, lodge living animals, and in winter they travel under the ice and out of the direct sight of men. These problems are resolved in several ways. One is to look for beaver during the brief daily period when beaver and men are both active, at dawn and dusk, and to shoot them. This strategy is only available before and after the formation of the ice cover. But most beaver hunting is a winter activity. The second method of encountering beaver is to set a device to capture beaver during the night when they are naturally active and men are not present. In winter the devices are set under the ice; in fall they are set in or accessible to water. The Waswanipi term for this practice would translate into English as "drowning", because they set their traps, or occasionally snares, so as to kill the animals by stunning or by drowning, and do not usually use sets that merely capture and immobilize beaver, as this would not meet the obligations to cause beaver the least suffering possible. Finally, men may meet beavers by arousing them during the daylight hours, driving them out of their lodges or burrows and taking them at holes cut in the ice, either catching them by hand or in a net, before dispatching them.

When comparing the two winter hunting methods the Waswanipi say that waking the beaver always results in the capture of some beaver, indeed usually most of the beaver in a colony. Thus they say it has a greater impact on colonies than trapping and that trapping should be preferred, although the former method produces a quicker harvest. The hunters say they must choose how to hunt, and how many to hunt, as well as where and when to hunt.

2.2.2 Customary Law and Organization of Territory and Hunting

The decisions concerning where to hunt and where not to hunt each year are organized by the Waswanipi around the system of hunting territories, which can range in size from approximately 250 to 1500 sq.km. Each hunting territory is under the supervision of a hunter, usually an active elder. The hunting territories have existed in

present form since at least the turn of the century. Although they have both existed and changed over longer periods of time, it is now thought that some hunting territory system is likely to have existed at times during the period before the arrival of Europeans.

Hunting territories have been recognized since the 1930's by the governments for the purposes of supervising beaver trapping, but the system of hunting territories clearly pre-dates official government recognition. The hunting territories serve the Waswanipi for a much wider range of harvesting activities than the harvesting of fur-bearers, as they are used to organize big game hunting, fishing and waterfowl hunting activities as well. Furthermore, the government efforts to provide supervision of Waswanipi beaver harvests had ceased in the mid-1960's, that is several years before the present research was begun, because the opening up of the region by southern Canadians was thought by the government to make strict control of fur pelt sales impossible. The data presented here therefore reflect Waswanipi systems of management.

The Waswanipi men who supervise the use of each territory are called "owners" by the Cree. However, they cannot alienate the land and they exercise a spiritual authority, based on their ties to spirits and the land, within a system of communal rights. Their role might better be described as one of stewardship. There are approximately fifty stewards among the approximately 225 adult Waswanipi men. Stewards generally have the right and the obligation to decide whether a hunting territory should be used for harvesting of big game and fur-bearers during any year, and they allocate long-term rights and seasonal privileges to use the territories to hunters who do not have their own. They can thus decide, roughly or precisely, how many hunters will use a territory, and they can indicate to those who do how many of various kinds of game animals they may harvest, and when and where they can be taken. Although this direction is normally kept to a minimum, and it often takes the form of discrete suggestions and providing information, thus respecting the autonomy of each hunter, their supervision is also usually respected.

The stewards, by repeatedly returning to the same tracts of land over the course of many years, have the opportunity to observe and assess the condition of the game populations on the territory. And, because they are also deciding, and informed of, the numbers of major game harvested, they are in a good position to relate trends in game population parameters to the impacts of hunting as well as to other factors. Stewards use this knowledge to direct hunting of major game populations on their territories. They recognize game which responds to such management, and other game populations which do not. They say for example that beaver and moose respond to how they hunt them, but that variations in hare and grouse populations are generally not responsive to how many are harvested.

2.2.3 Monitoring Game Populations

Information on the composition of beaver colonies is collected from signs of beaver around the hunting sites, from the sizes of the beaver caught, and from information collected in the process of butchering beaver. For example, the size of the last cohort of beaver born to a mating female can be determined if the female is caught, because women look for placental scars on the uterus when butchering the beaver.

Another factor providing information on colony composition is the previous knowledge of the history of hunting at a colony. Senior stewards who are in charge of hunting territories are able to mark on maps each of the active beaver colonies which they know in the areas they regularly use. And for each colony, sometimes over 100 in number, hunters can list the number, size and sex of each of the beavers they caught the last time they hunted it. This can often be done for two or three years previous, depending

on the individual. Furthermore, stewards can often also indicate how many beaver of each age and size they think were left at the colony after they last trapped it.

The information hunters gather about the game populations of the regions they hunt are synthesized in a number of ways. One is in these mental maps of colonies and their composition. Mature hunters can also usually state whether there are more beaver colonies now than there were a year ago, or five years ago, or when the hunter's first child was born, possibly thirty or fifty years before. They do not usually remember exact numbers, but report relative quantities or trends. Hunters can often comment on whether the number of beaver per colony has been going up or down, on whether females are having more or fewer young per year, on trends in the frequency of different age/size categories, on changes in "shyness" to traps, on changes in the rates of wolf and other predation, and on changes in forest composition, regeneration, and the availability of food for beaver.

The population parameters the Waswanipi hunters monitor are precisely those which biological scientists have found to be important indicators of the condition of the beaver populations, and important factors in determining the appropriate levels of harvesting. However, the Waswanipi phrase their knowledge in their culturally distinct system of concepts and values. The signs noted by the hunters are therefore understood as responses by the animals and spirits to the hunters previous hunting activities, i.e., to the number of game killed. The Waswanipi therefore say that they should and do adjust their current hunting efforts according to trends in the indicators of the condition of the game populations.

2.3 MORAL ECOLOGY

2.3.1 Hunting Ritual

The values and ethics of reciprocity which people say govern the hunt are reflected as well in rituals. At the beginning of each hunting year it is a common tradition for groups of hunters at the settlements, or in the fall camps, to have a feast with the first beaver caught. The first beaver is eviscerated and specially cooked on a open fire, while the internal organs are boiled. The beaver are then shared at a communal meal among all those present in the settlement or camp. Hunters say this is to show respect for the beaver and to request that the beavers give themselves to the hunters so that they may feed their families.

Beaver, two or more years of age, are estimated to typically provide 23 pounds of meat and edible viscera, and taking account of sub-adults in the harvest a typical food portion is 17 pounds per beaver. During the winter period, beaver were estimated to have provided Waswanipi families with between 25 and 45% of all calories available for human consumption at the hunting camps.

The beaver ritual reaffirms symbolically that the beaver is food, and that there should be no waste of the beaver food. The ritual beaver cooking method results in the burning off of the fur of the animal, and the cooked skin of the beaver is eaten under these special circumstances. The special cooking, which consumes the fur, also signifies that it is the food value of the beaver, not the commercially valuable pelt, which explains why beaver are willing to give themselves; and it is this value which must govern or have precedence in the hunters own decisions on when and how many beaver to try to capture. The rituals focus on hope for a good future hunt also re-emphasizes that the sustenance of humans in the longer term, throughout the coming winter and for coming years and generations, depends on the present proper respect for beaver.

The symbolism of the ritual is therefore based on reciprocity between men and animal (Scott 1983), reciprocity which includes respect for the needs of animals to survive

as a population, and which is complimented by animals respecting the needs for humans to subsist and survive as well. When hunting responds to the signs of when animals are giving themselves, then both animals and hunters find survival and healthy lives. This reciprocity is reflected both in the ritual, and in the way hunters conceptualize their hunting activities.

2.3.2 Hunting Ethics

If a hunter has bad luck in his hunting of beaver or another animal, without apparent natural causes, it may be a sign, in the view of the Waswanipi, that those animals do not want to give themselves. The hunter's possible responses are sanctioned by several proverb-like statements.

It is said that if a hunter does not have luck with beaver, for example, he will have luck with other animals. So one response may be to hunt other animals. Indeed if a hunter is having luck with other animals it may be a sign to wait until next year before trying to hunt beaver again. A corollary statement is that if there are three or four families living together, there has to be one or more that does not do well, and those that are having luck will help them out. Thus because people share, or because others are having success, a hunter may limit his catches. A second statement is that a hunter who does not have luck with beaver trapping may find beaver want be caught in other ways. Thus, when a hunter believes he is having bad luck he may consider changing his hunting methods, or changing the animals he hunts. The signs and indicators of the beaver intentions will tell the hunter which choice is correct. It is difficult for hunters to articulate in words precisely how this understanding is reached, because it depends on such diverse knowledge of the history of the beaver populations being hunted, and on so many different indicators. Nevertheless, I would suggest that if the indicators are that beaver are still abundant and not declining the tendency will be for hunters to change their hunting methods, or to simply await a change of seasons and hunt beaver again; whereas if the indicators are of disturbance of the beaver populations, the tendency will be for hunters to abandon the hunt for a year or longer.

Such decisions may lead hunters to take fewer beaver in the coming year than in the past, or not to use a hunting territory in a given year. The decisions about hunting are therefore part of an extended process. They do not begin when the hunter goes looking for beaver lodges or to set traps. They are part of an ongoing process, and at many stages the signs or situational factors may convince a hunter not to pursue the capture or killing of a beaver at a particular colony, or any of the colonies on a particular territory. The hunter must, in the Waswanipi view, decide at each step if the beaver are being given to him.

This system of knowledge and ethical action is potentially highly responsive to the condition of the wildlife populations, and has the practical potential to conserve and manage the wildlife by linking decisions on the intensity of hunting effort to conditions of the hunted populations.

This stated responsibility for making harvesting levels respond to the perceived condition of the beaver populations, raises a pair of central questions for further analysis; Is this knowledge effectively applied in practice; and can the hunters' knowledge and practices effectively manage the beaver populations they harvest?

3.0 WASWANIPI HUNTING STRATEGIES AND MANAGEMENT IN PRACTICE

The extent to which Waswanipi hunting practices conform to cultural concepts and values was examined by analyzing separate data on hunting activities and game

populations. These data are derived from diaries of daily activities kept by hunters for my research, from interviews on actual hunting activities with a variety of Waswanipi hunters (most of whom were not included in the interviews on Cree knowledge reported above), and from the results of independent research, both biological surveys and social science harvesting research.

The behavioural features I examined are: a) the hunting strategies involved in choices among hunting methods; b) whether hunting intensity responds to hunting success; and c) whether there is evidence that Waswanipi hunters manage and conserve beaver populations.

3.1 HUNTING STRATEGIES

In order to assess the strategies involved in the choices among the different beaver hunting methods, I first evaluated the comparative reliability and efficiency of the methods based on work diaries kept by the hunters. Three of the detailed diaries, covering the activities of five hunters provided sufficient detail to calculate method-specific statistics.

Overall reliability, defined as the percentage of the days on which beaver were sought which resulted in the harvest of at least one beaver, was slightly higher for the method of waking the beaver than for trapping, although there was considerable variability and overlap on a hunter by hunter comparison.

Overall efficiency of hunting, defined as beaver harvested per man-day of work, was higher when waking the beaver. This method produced 0.8 beaver per man-day, compared to 0.6 for trapping. Waking beaver was consistently equal to or more efficient than trapping.

The work diaries indicate that the occasions on which people actually chose to wake the beaver were fourfold: when departing or returning to a bush camp and needing food for immediate use; when travelling through or stopping for short stays in an area, at which times food was again produced for immediate use; just before break-up, when food caches had to be supplemented in anticipation of a period of reduce harvests; and in one case when hunters had "bad-luck" with trapping and they changed their hunting method. In total about one-third of the colonies hunted by this sample of hunters were harvested by waking the beaver. However, I believe on the basis of general interviewing, that this sample overestimates the community wide frequency of use.

In any case, the important finding was that while waking the beaver is more efficient and equally reliable, as compared with trapping, and while it could permit the capture of more beaver in total, it was in general one used in a restricted number of circumstances and in particular when there was an immediate subsistence need. The main reasons for explaining the limited utilization of this method are the conservational factors that weigh against its extensive use.

The choice not to use the technique of waking the beaver as the predominant hunting method is a clear indicator that hunters' choices limit their harvests, rather than any inability to harvest more beaver, because almost certainly more beaver could be caught if this technique was widely used. These initial findings make plausible the possibility that Waswanipi hunters are able to generally manage beaver populations, a hypothesis which may now be more carefully examined.

3.2 ASSESSMENT OF WASWANAPI MANAGEMENT IN PRACTICE

Several types of evidence were gathered to examine whether Cree regulate hunting effort in response to harvesting results, and whether they manage beaver populations effectively. The necessary data were available at the level of hunting territories and at the regional level.

3.2.1 Rotation of Hunting Territories and Hunting Effort

A first indicator of management decision making by stewards is that approximately two-thirds of the hunting territories being actively used by the Waswanipi hunters during this period, were used on an intermittent or rotational basis, in order for game to "grow" between harvests. On average, regularly hunted territories were used for 3.3 out of the 5 years for which data were available. However, the actual pattern of use is more complicated, because about 40% of hunting territories are divided into sections by their stewards. In these cases, the territories may be used every year, but the actual area being harvested can vary from year to year, a pattern of rotational harvests within hunting territories. When this factor is taken into account over three-quarters of hunting territories or sections are used on an intermittent or rotating basis. There are thus only about 23% of territories where the whole territory, or a section thereof, was used for five consecutive years. The first major conclusion is therefore that an active system of rotational use and management is widely used, and indeed is typical under conditions where it can be practiced.

The actual harvests were found to be related to these patterns of rotational use. Territories and sections were grouped for analysis into three categories, those which had been hunted the year previous to the recorded harvest, those which had not been hunted for one year previous, and those which had not been hunted for two or more years previous. The average beaver harvest per square kilometer was found to increase from the first to the last category, averaging 0.34 beaver per square kilometer for areas hunted the previous year, 0.45 for areas not hunted for one year previous, and 0.53 for those areas not used for two or more years previous to the recorded harvest. The difference between the first and the third categories of territories is significant at the 0.05 level. The trend and the differences indicate that after letting a hunting territory go unharvested for one or more years hunters take more intensive harvests of beaver per unit area. A similar but non-significant trend was found for moose harvests.

The mechanism by which this increased harvest occurs involves both the actual increases in the densities of beaver populations, and the decisions made by the stewards on the basis of their perception and interpretation of these changes. The stewards thus fallow their hunting territories, and regulate the harvests in response to the periods of fallow, and presumably to the actual and perceived changes in the densities of game.

3.2.2 Responses to Difficult Management Situations

While many territories are fallowed on a regular basis, the size of some territories, or the size of the families of the stewards who use them, or the presence of a settlement on the territory, make planned intermittent use of some territories more difficult, infrequent and irregular. These territories, where the man/land ratio is usually high, present an especially difficult management situation to the stewards. About 30% of the territories actively used during this period fell into this group.

There are some of these territories where multi-year declines in the condition of game populations occurred, despite efforts of stewards to reduce harvests to levels which would permit game populations to "grow again". Demographic indicators generally show that these territories have above average human population densities. I do not have

measures of trends in animal populations at the level of individual hunting territories, but stewards of these territories reported downward trends in game populations which extended over several years despite their initial efforts to alleviate the problem. These eight cases present a critical test of Waswanipi management practices.

In the eight cases where people said game populations are declining, over much of a territory during a several year period, five were cases where both beaver and moose were said to be declining and three were cases where only beaver were affected. Hunters reported that the game were not completely depleted, but the declines were perceived.

The reasons for these declines were without exception said by hunters to be over-harvesting. In seven of the eight cases the level of the harvests of the affected region had clearly been reduced to below the average for the region, but the decline was reported to be continuing, and clearly the initial reduction in harvest levels was not sufficient. I do not have data on the responses on the last of the eight territories where only a section was reported to be affected.

Six of the seven remaining cases, where most of the area of a hunting territory was affected, were fallowed on an ad hoc basis for one or more years when hunters said that it was clear that the effort to reduce harvests the previous year had not be sufficient. On a seventh area the hunters continued reduced harvests of big game, but stayed on the territory. The seven cases are all clear examples of reducing hunting effort in response to perceived declines in game populations.

In the five cases where I was able to monitor the short-term effect of letting the territory go fallow, the game populations on each territory were reported to have been re-established so that hunting could resume after one to three years. And, in the longer term, later harvest research questionnaire data showed that normal harvest levels were again achieved in succeeding years on all seven territories.

The relative speed of the recovery of harvests, and presumably of game populations, indicates that Waswanipi hunters respond to indicators of game population declines before those trends proceed so far that recovery by the game populations is endangered, or considerably lengthened. In summary, when territories which are not fallowed frequently show signs of over-hunting, the use of an ad hoc fallow, or reduced harvests, are fully effective responses by the stewards.

3.2.3. Regional Management and Conservation

The region-wide effectiveness of these territorial management strategies is best assessed by examining the available information on regional beaver populations and beaver harvests.

The first aerial survey of beaver colonies in the regions adjacent to the Waswanipi area was made by a university researcher (Drolet 1965), four years prior to the commencement of the field research on which this paper is based. Two years prior to the fieldwork, an aerial survey of beaver in the Waswanipi region was made under combined auspices of the Department of Indian Affairs and Northern Development and the Quebec Department of Tourism, Fish and Game (Emond 1967). And, six years after completion of the initial fieldwork, a second survey of beaver populations of the region was conducted by the Quebec government (Banville 1977). I have retabulated the data for the Waswanipi hunting territories and the immediately adjacent areas, and tabulated data from the maps of beaver colonies made by Cree hunters during the fieldwork period between the aerial surveys.

The first aerial survey just to the north of the Waswanipi area, four years before my research, indicated beaver colony densities of 0.13 colonies per square kilometer. The first government survey of the Waswanipi area, two years later, indicated 0.17 colonies per square kilometer. And the most recent government aerial survey six years after my initial research, indicated 0.14 colonies per square kilometer. The maps from Waswanipi hunters during the research indicated an estimated density of 0.14 colonies per square kilometer. The surveys in aggregate indicate relatively stable populations of beaver existed in the Waswanipi region over a period of thirteen years.

During the middle and latter parts of the same period, the estimated beaver harvests by Waswanipi hunters on their own hunting territories were 3193 and 3005 beaver respectively in 1968-69 and 1969-70. From 1972-73 to 1975-76, the harvests by Waswanipi hunters, estimated by the James Bay and Northern Quebec Native Harvesting Research, varied between 2242 and 3451 beaver per year, and averaged 2713. Given the inter-annual climatic variations, the range of harvest variation is modest. The twelve percent decline between the 1968-70 average and the 1972-76 average harvest is not considered significant, given the disruptions which were occurring in the region in the mid-1970's; indeed it is the relative stability of the harvests which stands out.

This relative stability of both beaver colony densities and beaver harvests are the best evidence of the success of Waswanipi management practices, as well as of the potential sustainability of the levels of harvesting being practiced.

On a harvest per colony basis, and taking into account not only the lands hunted in a particular year but all Waswanipi hunting territories, the 1968-69 and 1969-70 harvests represent catches of 0.77 and 0.71 beaver per active colony, which is below the probable sustainable yields of the populations, given research in other sub-arctic regions. According to government mandated wildlife managers the minimum permissible harvest in the region at Waswanipi would be 1.0 beaver per colony, and this level would normally permit some increase in the populations (pers. comm. in Feit 1978).

There is therefore clear biological evidence that beaver populations of the region were being managed and conserved by the Waswanipi. In a longer term view, the very presence of the beaver populations today attests to the long-term management of game populations by the Waswanipi, and to a general limiting of harvests to within sustainable limits.

4.0 WASWANIPi MANAGEMENT PRACTICES IN HISTORICAL PERSPECTIVE

Despite the recent success of Waswanipi management practices, the historical record and present circumstances indicate that the Waswanipi hunters are not always able to achieve comparable levels of success. The reasons for their difficulties give some insight into the problems they face today, trying to continue to manage wildlife populations in rapidly changing, often difficult, and sometimes impossible circumstances.

4.1 HISTORICAL PROBLEMS OF CONSERVATION

In the late 1920's and early 1930's, the beaver populations of the entire region were depleted. The Waswanipi elders attribute the depletion in their area to over-hunting on their part. The reasons for their over-hunting are indicated in the archival records of the period, which include correspondence from Waswanipi leaders, fur traders and missionaries. These sources all indicate that outside non-Native trappers began to enter the region during the period of high fur prices in the late 1920's and that they depleted one hunting territory

after another of fur bearers. Unable to stop the progressive depletion of the fur resources, the Waswanipi appear to have over-hunted the beaver and marten rather than let outside trappers take them all.

This period has been described in the scientific and popular literature as an example of the complete breakdown of conservation practices, but a detailed examination of the evidence does not support this interpretation. Throughout the period it is clear that Waswanipi hunters maintained the management and conservation of other fur bearers, of moose, and of other game populations which were not under threat of depletion by outside trappers. The fur pelt sales records show, for example, that normal harvests of other fur-bearers occurred throughout the period. Furthermore, none of the contemporary observers indicates any depletion of moose or fish populations during the period, and indeed Waswanipi today indicate that they survived the period by carefully managing these resources.

The actual pattern of trapping out also indicates careful choice and the influence of cultural rules. Thus, the record of beaver and marten pelt sales does not show any substantial increase in harvests, followed by a rapid decline. Rather it shows a slow but steady decline in harvests, extending over a ten year period. This suggests a rather reluctant over-harvest, taken not by extraordinarily large and uncontrolled trapping, but rather by failing to carefully fallow land and permit beaver to recover from continuous harvesting. This is consistent with the view that people continued to take only what they could use and consume, that is their harvest was limited by subsistence needs, even when they were convinced that interference from the outside would prevent them from conserving the beaver and marten populations as they desired. The slowness of the over harvesting also suggests that if the circumstances had changed, and outside trappers had left the region, then the depletion could have been stopped.

The Waswanipi were well aware of the dangers of over-hunting, and while they judged that they had little immediate choice, they also sought simultaneously to re-establish the conditions in which conservation of these resources would again be possible. To this end they petitioned the government to close the region to beaver trapping, a request the government met by recognizing the hunting territory system and setting up the beaver reserves in northern Quebec. At the same time, once the beaver were depleted, and presumably outside trappers had departed or at least been significantly reduced in numbers, the Waswanipi set up a closed season of their own to aid the recovery of the affected populations.

This historical example shows one of the sets of conditions under which Native management and conservation systems can be disrupted, namely when outside intervention makes the task of local management impossible to achieve.

4.2 CONTEMPORARY PROBLEMS OF MANAGEMENT

Today, disruptions of Waswanipi management take the form of inappropriate government regulations or policies, and of large scale industrial development of non-wildlife resources.

When I began working in the Waswanipi region in the late 1960's, conservation officers were trying to impose a directive that Waswanipi not hunt moose within ten miles of the roads or towns, that is in the areas in which the sport hunt of moose was concentrated. In the previous decade, the Waswanipi had seen the sport hunt of moose grow from just a few animals a year to nearly half their own harvest levels, and they indicated their own willingness to share this resource. But while they were prepared to

share, they did not accept the arbitrary attempt to exclude their own hunting activities from the areas also used by the sport hunters. The lands on which their hunting was to be restricted were clearly within their own system of hunting territories, and it was these easily accessible lands which were important areas for elderly hunters, and for those Waswanipi who camped near towns and roads in order to be near children going to school or in order to participate in part-time wage labor.

The result of the arbitrary government policy, and of the Waswanipi unwillingness to comply with what was perceived as an unjust intervention, was that the Waswanipi increased the kill of juvenile moose in these areas when they needed food, so that they would be less easily observed transporting or catching the animals. It was a practice the Waswanipi did not approve of, but it was the best alternative they could find under the circumstances.

Following signing the James Bay and Northern Quebec Agreement (JBNQA) in 1975, which recognized a broad Cree right to hunt and manage wildlife populations, some of these anomalies ceased, and a more acceptable pattern of co-management with government is being established.

Similarly the Waswanipi willingness to share the resources has continued to be demonstrated, as each year since the signing of the Agreement the Waswanipi have permitted a not insignificant number of sport hunters to take moose on the limited lands reserved for exclusive control by the Band. This is in addition to the fact that sport hunters continue, under provisions of the JBNQA, to hunt on all public lands outside the hunting reserves, that is the vast majority of land in the region. Indeed, developments in the area have resulted in new roads and have considerably increased the areas easily accessible to sportmen.

The Agreement has not however resolved all the problems the Waswanipi hunters face. I do not have time to examine the various managerial and regulatory problems here, but the problem of industrial development must be highlighted. In addition to ongoing hydro-electric developments, and the severe mercury problems now developing at the newly built reservoirs north of the Waswanipi region, the Waswanipi face the immediate problem of forestry operations on their lands.

Extensive clear-cutting has been going on with increasing intensity since the 1960's, and without consideration for the Waswanipi hunting territories and systems of wildlife management. Companies, and often governments, simply argue that a regenerated forest is good for wildlife, that clear-cutting is efficient, and that adequate protection for wildlife can be made by leaving uncut areas of immediate moose yarding and shoreline habitat; a total uncut area which represents a few percent of the total cut-over area. The result is that nearly whole hunting territories are being cut-over. The companies and governments say the Cree affected can hunt elsewhere for a few years, until forests and wildlife re-establish themselves. Leaving aside questions of the extensive cut-over areas that are not regenerating, and also of how long it takes the regeneration, Waswanipi hunters find these forestry practices devastating for their own use of wildlife.

As I have indicated above, the Waswanipi system is based on building up a detailed knowledge of the land and the wildlife of a hunting territory over decades of personal use. Stewards say that they conserve and respect wildlife not only for their own benefit, but to be able to pass the land on to the next generation of hunters. This involves not only passing on the territory but educating the next generation, passing onto them the knowledge of the history of the land and of the game, so that they can continue to manage the wildlife. This knowledge is not learned in the abstract, but concretely by learning how to hunt a

particular territory and particular game populations. This is how the Waswanipi reproduce the system of management, and it is this link in the social transmission of knowledge and skill from one generation to another which is broken when a trapline is cut over and must be abandoned for several years. The elders no longer have the specific knowledge and skills and history needed to manage the territory when it is again used. Both the social ties and the knowledge which are the very system of management are endangered.

In the few cases where I have asked hunters how they would share their hunting territories with those who want some use of the forests, they have generally said that if a carefully selected 40 to 50% block of a hunting territory were left uncut, they could continue to hunt on their lands. And, they said that when the cut area has been regenerated with forests, then the uncut area could be cut-over. This way they could continue to use their lands, and to pass on the land and the knowledge they have stewarded through a lifetime of care. This way the social fabric of management could be reproduced among generations and between men, animals and spirits.

This would clearly require additional pre-investment in forestry roads and hauling costs. But the costs have not been carefully evaluated in order to determine how substantial they would be. Indeed, so far the needs of the Waswanipi have not been understood nor adequately considered by the companies nor the governments.

Present conditions therefore threaten the Waswanipi management system which has been effective over many decades, and which has shown itself to be flexible and adaptive throughout the rapid changes which have occurred in this century. In particular, the Waswanipi have responded effectively to rapid Native population increases, important changes in hunting and transportation technology, increased access to commercial markets and commercial food supplies and consumer goods, more sedentary life-styles, and the introduction of formal education systems.

5.0 CONCLUSIONS

The complexity of this adaptation, as well as of the conditions in which it can be threatened, emphasize the need for research on both contemporary practices and on historical conditions in order to better understand: 1) how Waswanipi management and conservation has been responsive to a complex interplay of changing ecological, biological, technological and socio-economic conditions; 2) how under certain combinations of these conditions Waswanipi wildlife management of specific species has not succeeded, or has been abandoned; and, 3) under what conditions Waswanipi wildlife management has been continued or re-established.

The "discovery" of the effectiveness of Waswanipi management practices is not surprising, indeed it would be surprising if Native hunters who depend on localized resources for their own and their children's well-being did not try to find ways to manage and conserve resources. So long as the users are assured effective control of the resource, and continued access and control for future generations, and so long as they see the resource as the basis for long-term social well-being, it is clearly in their interest to try to conserve the resource, to the limits of their ability, and to the limits which circumstances allow.

We should therefore start from the assumption that such an interest and practice may exist, and be prepared to recognize its presence, or absence, but only after careful consideration of the evidence. Recently, similar practices and systems have been reported by researchers in other Native communities (see Berkes 1981, Brody 1981, Freeman 1985,

Nelson 1983, Scott 1983, Winterhalder 1983). Although the number of such studies is still small and we do not therefore yet know how widespread such practices are, they are certainly more common than has been previously recognized. Indeed, the issue may not be to determine how widespread indigenous management is, but rather the factors promoting its expansion or restricting its development at present.

What has been learned so far makes it clear that the often anecdotal stories of the success or failure of Native wildlife management, with which the lore of some wildlife managers and publicists and critics of the Native cause are replete, are insufficient for developing an accurate picture of how Native management works, how extensive it is in practice today, how extensive it was in the past, or how extensive it might be in the future.

It is not adequate, I argue, to cite examples of Native over-hunting, which certainly has and does occur at numerous times and places, as evidence that there is no Native interest or capability in wildlife management. We have to approach indigenous management of wildlife in the same way we approach scientific management, as a variety of integrated systems, each with a history of successes and failures, operating within some constraints beyond the practitioners control (e.g., development impacts), and therefore achieving only partial successes.

Both systems may not be practiced, or may not be working effectively in certain areas of the north today, but that is not to say that they cannot be expanded and adapted. And, both clearly have a future, and one which has to be recognized by practitioners of the other system.

I think that the future management of beaver and other wildlife populations in extensive parts of northern North America now depends on the effective joint participation of government mandated wildlife managers and Native wildlife managers. Native people can no longer use or manage the resources without extensive and effective means of participating in the decisions taken in the wider society which profoundly affect the future of the resources and their use. And government wildlife managers cannot protect or manage the wildlife resources without effective means of participating in the decisions taken in Native society which profoundly affect the future of the wildlife resources and their use. Joint management seems to be essential, despite the fact that some government wildlife managers and some Native wildlife managers would each claim exclusive rights of management. Exploring the forms of such joint management, given the real, but limited, effectiveness of each system in itself, will be one of the major challenges in wildlife management in the next several years.

The substantive findings of the research reported in this paper show that Native hunters can have a real and practical interest in the management and conservation of wildlife. Wider recognition of this conclusion could provide a basis for efforts to establish communication, and practical cooperation between government mandated wildlife managers and the Native managers. The need for cooperation among all groups has been pressed on everyone in recent decades by the increasing dangers to the wildlife resources. The new findings show that there is a basis for mutually respectful cooperation, and joint management. Indeed, more accurately, these data suggest that parallel management already is probably quite widespread. What is now needed is more joint management.

6.0 ACKNOWLEDGEMENTS

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SESSION III:

CO-MANAGEMENT OF RENEWABLE RESOURCES

KEYNOTE ADDRESS:

DEVOLUTION OF POWER IN THE NORTHWEST TERRITORIES: IMPLICATIONS FOR WILDLIFE¹

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ABSTRACT: *Devolution of powers to the regional or local level in the N.W.T., through such vehicles as Native claims settlements, transfer of powers from federal to territorial or local authorities, and establishment of cooperative management boards, is currently in progress. Do these developments really meet Native people's demands for effective involvement in fish and wildlife management, and are they conducive to conservation? Co-management, it would appear, means different things to different people. Two models of wildlife management are described: the state system and the indigenous system. The devolution process as it is currently unfolding is more likely to lead to the entrenchment of the state system at the local or regional level, rather than a significant transformation in the direction of the indigenous system. This outcome will, unfortunately, neither meet the concerns and aspirations of Native harvesters, nor necessarily result in more harmonious and effective resource conservation. Devolution is a necessary but not sufficient step towards those ends. A more effective bridging of the two systems is proposed.*

1.0 INTRODUCTION

Everyone agrees that conservation of fish and wildlife resources (which I shall refer to henceforth simply as "wildlife") in the North is a matter of vital public interest. Yet this consensus does not extend to the methods--institutional or technical--for doing so. One reason for this is that wildlife management is not an abstract concept but a practical exercise that must meet several public policy objectives which cannot be maximized simultaneously: these include legal or human rights, economic efficiency, social and economic equity, as well as conservation. This fact alone makes discourse about management difficult. First, we often have difficulty at the best of times in distinguishing clearly among these objectives, and secondly, consciously or unconsciously we find it all too convenient to mask one in the name of the other--questions of rights or equity are disguised as technical issues, as readily as management and efficiency questions are claimed to be issues of equity of human rights. There is thus plenty of room for deliberate obfuscation as well as honest disagreement or misunderstanding about the issues we are considering at this symposium.

To the extent that it is possible to separate these issues, I propose to talk today about conservation, and the ideas and techniques we use to that end, rather than legal issues of aboriginal or other rights, economic efficiency issues, or social equity issues. I will speak in general terms at the outset, that apply to all northern jurisdictions, although later I will focus on the N.W.T. specifically.

¹ Much of this paper is condensed from Usher (1986). As that report contains a much more comprehensive discussion and list of references, only the most salient references are included in this paper.

There is no single model of wildlife management that commands the allegiance of all those who claim an interest in wildlife resources. The world does not stand still, however, in wait for that single model to emerge. Several political processes are underway in the North that will have the effect of devolving significant responsibility for fish and wildlife, and to a lesser extent for their habitat, from central to regional or local authority. These include:

1. The settlement of Native claims, which will provide for both harvesting and management rights, and the creation of new political and economic institutions at both territorial and local levels.
2. The development of self-governing institutions and Native-owned economic enterprises, apart from the claims process.
3. The growth of the N.W.T. government (and the role of Native people in it), through the devolution of specific powers from the federal government; the development of new management capabilities and responsibilities on its own initiative; and the reinforcement of existing capabilities and responsibilities through increased funding and expertise.
4. The possible division of the N.W.T. and the creation of new forms of government in one or both of the new territories.

I need not speculate here how far these processes have actually gone, or will go in future. It is enough to observe that they are currently the chief mechanisms of change. While some opposition is expressed by non-Native recreational hunting and fishing interests, devolution of fish and wildlife management is now advocated by most government agencies-territorial and federal--as well as by Native people themselves. As other speakers have already indicated, Native people have by far the greatest stake in the wildlife resources of the North: economically, socially, and legally.

But will these arrangements really meet the objectives that Native people have for their effective involvement in fish and wildlife management, and are they conducive to conservation? Both governments and Native organizations may claim to advocate devolution and co-management, but are they talking about the same thing?

Devolution can take two forms: the movement of authority and responsibility from a higher to a lower level within an established and intact framework, or the actual transfer of authority and responsibility from one system to another, which implies a transformation of the management paradigm.

2.0 TWO MODELS OF WILDLIFE MANAGEMENT

A model, or system, of wildlife management consists of at least the following elements: an information base and a paradigm, or set of mental constructs, that organizes and interprets it into useful knowledge; a set of practitioners with a distinctive worldview or culture that includes both this paradigm and certain normative values; a system of rules, norms, and customs that are intended to govern the behaviour of all who partake of wildlife and its benefits; and an overall set of objectives which are embedded in the larger structure of values and goals of the society as a whole.

Let us consider two models of wildlife management, which I shall refer to as the "state system" and the "indigenous system". In their ideal form, these systems have the following attributes, among others.

The state system rests on a common property concept in which the state assumes exclusive responsibility and capability for managing a resource equally accessible to all citizens. The state manages for certain levels of abundance on a technical basis, and then allocates shares of this abundance to users on an economic and political basis. The system of knowledge is based on a scientific accumulation, organization, and interpretation of data, and management problems are resolved in a technical, a historical framework. This system of management is bureaucratic, which is to say, hierarchically organized and vertically compartmentalized. Managers become distinct from harvesters, authority becomes centralized and flows from the top down. The environment is reduced to conceptually discrete components which are managed separately. As these separate management units take on a life of their own, management objectives diverge and become focused on specialized objectives: maximizing fur production, trophy production or recreational expenditures. Not least, the management of fish and wildlife resources becomes separated from the management of the lands and waters that sustain them.

We may add to this characterization certain basic tenets or paradigms which are so widely held among wildlife biologists and managers as to be part of their professional culture. The central core is of course the principles of the natural sciences. There are others that interpret human behaviour with respect to wildlife, which are especially relevant because the management of wildlife in the North consists largely of modifying human behaviour rather than the natural system itself. Some of these assumptions, as Dr. Milton Freeman noted yesterday, are embedded in our particular economic system, not least, for example, the "tragedy of the commons" paradigm. Despite their widespread acceptance in the profession, each can be shown to be of limited rather than general application, and in some cases, fallacious (see, for example, Berkes 1985; Feit 1984; Usher 1981, 1984). The indigenous system rests on communal property arrangements, in which the local harvesting group is responsible for management by consensus. Management and harvesting are conceptually and practically inseparable. Knowledge comes from the experience of every aspect of harvesting itself--travelling, searching, hunting, skinning, butchering, and eating. It is accumulated by every individual, and shared intimately and constantly within the household, the family, or whatever is the social unit of production. It is also shared and exchanged within the larger society, and handed down in the form of stories from one generation to the next. In sum, these observations, like those of the state system's, becomes coded and organized by a paradigm or set of paradigms that provide a comprehensive interpretation of them. The knowledge so produced becomes the cultural heritage of these societies, just as what we call science is part of ours.

In the indigenous system, all members of the group are involved with management as well as with harvesting, but leadership and authority within the group are based on the greatest acquisition of knowledge and the demonstrated ability to use it effectively. As well, significant management data include not only immediate observations of direct cause and effect, but also accumulated historical experience and a long-range conception of the future. The indigenous system of management is a core feature of all northern Native cultures, and is therefore intimately linked with their values, ethics, and cosmology, which are generally based on an integrated, non-compartmentalized view of the environment. In view of my comments about some of the paradigms on which the state system is based, it seems only fair to add that those of the indigenous system are not immune to error or fallacy either.

Let me stress again that I have just described ideal types. Real examples of both, past and present, are not always so far apart as those models suggest.

A brief survey of the history of the interaction of these systems in the twentieth century (and indeed they can hardly be said to have interacted in the North any earlier), shows that at best, neither system has held the other in very high regard, and more usually neither has acknowledged the other as having any legitimacy. Indeed, throughout much of that period, the state system has failed to recognize even the existence of an indigenous system, and has assumed itself simply to be filling a void (Brody 1981, Gottesman 1983, Usher 1984, McCandless 1985).

Obviously the state system has prevailed because of its constitutional authority and the power of its legal sanctions. It has also done so because practically all of its information base is obtained, organized, and legitimated under its technical paradigm, since it alone has the authority to set the research agenda and allocate the resources necessary to pursue it.

The indigenous system has responded by going underground, being practiced more or less covertly at the local level until, in recent years, being revealed by social scientists and reasserted (largely in the context of Native claims) by Native harvesters themselves (Berkes 1977, 1979; Feit 1984, 1985, this volume; Freeman 1985, this volume). It turns out that the indigenous system is far more sophisticated than many had credited it to be, and it has also remained intact to a remarkable degree despite the numerous problems that beset it.

Neither the rediscovery nor the reassertion have been altogether well received by the state system. There are obvious political reasons which I need not elaborate here. But there are scientific ones as well. One would hardly expect scientists to do other than defend the integrity of a paradigm that seems to function well, especially if the challenge does not arise from within their own ranks. Yet, some are responding with interest and sympathy, although quite properly, not uncritically.

We should be very clear about the legitimate reasons for skepticism, and what must be done to overcome it. Even in recent years, statements have appeared in wildlife management literature to the effect that the social sciences have not documented any instances of indigenous self-regulating behaviour (see Usher 1984). These statements are purely and simply in error, as yesterday's session clearly indicated. Yet, the skeptics have further questions to which they are entitled answers. One is, whatever self-regulating systems existed in the past, do they function today? Another is, even if they do, can they continue to exist and to function effectively in the future, given the very significant changes now occurring in the North? Further, the skeptics seek supporting evidence not only in the normative statements of hunters, and not only in what, as Dr. George Wenzel rightly indicated are the models of social reality that anthropologists construct, but also in observable behaviour and its measurable effects on wildlife. The facts related by Dr. Harvey Feit (1985) about the James Bay Cree are especially significant because they suggest that in that case, at least, the answer to both questions is yes, and that that answer is supported by all three categories of evidence I just enumerated. Yet, the skeptics may still rightly ask, can we generalize from that case and conclude that those answers hold in other parts of the North?

My answer is this: while the evidence we heard yesterday is not conclusive, it demonstrates two things that we can no longer ignore. One is that we have sufficient evidence to at least hypothesize the existence, viability, and adaptability of indigenous self-regulation, and second, that these are testable hypotheses according to the generally

accepted canons of science. The existence, effectiveness, and feasibility of local self-regulation is thus amenable to research and verification in the same way that the abundance and productivity of wildlife populations are. To fail to pursue this line of research is, I would argue, to fall short of our shared objective of conservation in the same way that failure to undertake sound biological research would be. Management and regulation by anecdote and horror story is simply not an acceptable substitute.

It is only through such careful research and evaluation that we can expect a useful synthesis to emerge from this debate at both the practical and theoretical levels. That the Alberta Society of Professional Biologists is actively furthering that objective at this symposium is one of a number of recent positive indications that this may happen. But it will take more than just expressions of good will to overcome the historic legacy of misunderstanding.

Let me add a final caveat. Our western assumptions about economic behaviour (which do not have universal application but are rooted in liberalism and free enterprise) predispose us to think that coercive regulation by external authority is the *sine qua non* of common property resource management. We must therefore be open to the possibility of viable self-regulating systems under alternative institutions and assumptions (see Roberts 1979). Such systems are not limited solely to North American Native peoples. Rather, their practical experiences provide us with important data with which to examine a more general question: what are the conditions that promote or diminish the possibilities for self-regulation? No society has a genetic or cultural monopoly on the capacity for self-regulation.

3.0 THE PRACTICE AND THE PROSPECTS

3.1 SOME GENERAL OBSERVATIONS

In practice, the management of fish and wildlife in northern Canada is based predominantly on the state system, although some jurisdictions are attempting to involve Native people much more directly in their operations. This is sometimes referred to as co-management, and involves such elements as:

1. devolving and decentralizing the management systems so as to incorporate more direct input at the local level;
2. establishing user advisory boards; and
3. encouraging Native people to become qualified to work as technicians and managers in the state system.

These strategies do not, however, necessarily serve to incorporate elements of the indigenous system as such, much less result in a shift from the state management system to an indigenous system of self-management. On the contrary, they are much more likely to result in the continuation of the state management system in a decentralized but largely unchanged form. I would say that these strategies add up to a system in which Native harvesters merely provide data, and the state system continues to do the managing and allocation, with no reference to the paradigm of the indigenous system.

I do not mean to belittle the progress that has been made to date. It is not very long ago that no one could have got a serious hearing on the issues we are freely discussing here today. The point is not, however, whether what management agencies are doing today is

unprecedented, but whether it is adequate. True, most now acknowledge that Native people as individuals are entirely capable of learning and putting into practice whatever scientific and managerial techniques and approaches non-Native institutions can teach them. True also, most now recognize that Native harvesters routinely amass an enormous set of data based on their empirical observations that could be of great value to the state management system. It is not yet generally acknowledged, however, that Native harvester's culture and experience provide them the tools to integrate and organize those data into an effective management strategy.

What I am suggesting, then, is that there is a very substantial gulf between those who believe that co-management can be founded effectively on only the first two propositions, and those who believe it requires acceptance of all three.

I believe that bridging this gap is an urgent priority for reasons not only of equity, but of conservation, because if we do not, there are a lot of harvesters out there who will reject, actively or passively, any co-management program that does not.

3.2 THE SITUATION IN THE NORTHWEST TERRITORIES

Let us examine the probable effects of devolution in the Northwest Territories, in light of this discussion. I will focus on three aspects of devolution: the settlement of Native claims, the evolution of territorial government, and the development of local self-governing and economic institutions. What I want to illustrate here are the difficulties we still face, notwithstanding the fact that more progress has been made, and there is probably more goodwill, understanding, and commitment to overcoming them, in the N.W.T. than in any other Canadian jurisdiction of which I have experience.

3.2.1 The Claims Process

Although the process of negotiating claims settlements is not yet complete in the north, the options appear to be narrowing. The Inuvialuit final agreement sets a basic pattern for the others to follow, as did the James Bay and Northern Quebec Agreement, which was signed in 1975. As well, the federal government has issued several policy statements with respect to claims, the latest of which (Canada 1981) sets out the framework to which the government expects future agreements to conform.

The federal government envisages protection for hunting, trapping, and fishing rights based on a system of preferential rights to wildlife on Crown lands and some exclusive rights on Native lands, subject to general laws of application for both conservation and public safety. Existing non-Native rights must be taken into consideration. The government also envisages a fuller participation of Native peoples in wildlife management on an advisory basis.

This is the pattern to which the Inuvialuit and James Bay final agreements, and the wildlife agreements in principle of the Dene-Metis and Inuit claims conform. Minor deviations from the pattern have been negotiated only with much effort on the part of the Native organizations, and, if anything, governments have hardened in their stance in recent years. The likelihood of altering this pattern at the negotiating table seems small, although the recommendations of the recent Task Force on Claims Policy (1985) may help.

The institutions currently envisaged for the involvement of Native harvesters in management are clearly in the public government model. At the regional level, there will be wildlife management boards consisting of an equal number of Native and non-Native (essentially government) nominees. These management boards are not intended to replace the existing state management agencies like the N.W.T. Wildlife Service or the federal

Department of Fisheries and Oceans, but rather to set policy for them, subject to ministerial approval. They are unequivocally accountable to the respective ministers, rather than to the harvesters or to Native people as a group.

At the local level, harvester organizations will be established essentially along the lines of the recently emerged (and government-promoted) Hunters and Trappers' Associations. As currently envisaged, these organizations will have responsibility chiefly for:

1. allocating community and regional harvest quotas among their members;
2. setting local regulations within strictly defined limits;
3. reporting harvest levels to state management authorities; and
4. providing a "single window" for communication between harvesters and state management authorities (as well as between harvesters and industry).

Contrary to earlier demands by Native peoples for self-determination, it seems clear that the settlement of Native claims in the N.W.T. will not result in the replacement of colonial institutions for wildlife management by an indigenous one. Indeed, it is not clear that any truly indigenous institutions operating according to the indigenous system will result from claims settlements.

3.2.2 Government of the Northwest Territories

As the powers and responsibilities of the Government of the Northwest Territories (GNWT) grow, the general pattern is that they evolve in the pattern of provincial administrations. Specific programs are transferred from the federal to the territorial level, with relatively little change in either the content of the program or the structure of its administration.

Should one expect the trends in fish and wildlife administration to be much different? Even those functions such as wildlife management that have rested at the territorial level for many years continue to evolve more in parallel to provincial administrations than in a unique or an indigenous fashion. One strong reason in this case is that the state system requires a corps of professional staff that, for the foreseeable future at least, can be drawn only from a pool of southern university graduates who have already been socialized and professionalized according to mainstream North American tenets of wildlife management. This is the same pool of professionals on which all provincial administrations must draw, and the N.W.T. staff will likely be wary about deviating, or being seen to deviate, from the professional standards, criteria, and procedures of their colleagues in other jurisdictions.

This tendency is unlikely to be affected by the fact that Native legislators will continue to have significant input at the political level, or that there may be an increasing number of Natives at higher levels in government administration and management. It does not follow that because an individual is of Native descent or heritage that he or she will want to or be capable of advancing the indigenous paradigm within the state system.

One reason is that there are increasing distinctions among Native northerners according to education, occupation, residency, and socio-economic orientation. Not all Native people want to be harvesters themselves. An increasing, though still small proportion, have full-time careers and live urban lives in the large communities. Although they may value harvesting as an activity and as a right for their people, they themselves do

not participate in it in much more than a symbolic sense, if even in that. This increasing diversity is a perfectly normal and an unavoidable development and, indeed, one welcomed by the majority of Natives and non-Natives alike. It is a development that results not only from the effects of education and employment, but also from the very process of Native political organization and the settlement of Native claims (La Rusic 1979).

It is primarily from this group, however, that those Natives who will have significant power and influence over wildlife management in the N.W.T. cabinet and bureaucracy will be drawn. It can hardly be otherwise. Maintaining one's skills and involvement as a harvester may be compatible with being a member of the legislative assembly, but not with the heavy commitments of a cabinet or senior administrative post. Most Native persons who reach such a position will have a fundamental understanding of the importance of Native harvesting rights but a less complete understanding of the sophistication and utility of the indigenous management system. That is something that comes with years of experience in an endeavor from which their choice of career and the necessities of their daily life have long since cut them off. To the extent that they do recognize the contemporary importance of the indigenous system, they will have a difficult time advancing its place in the institutions of public government in the context of a close, continuing working relationship with the professional staff on whom they rely for policy development and implementation.

There is a further problem: at the cabinet level, members generally consider that they have a responsibility to govern on behalf of a generalized "public" whose interests may be perceptibly different (in some cases, at least) from those of the great majority of their constituents. It might be argued that this "public" is in fact the state, although that discussion cannot be enjoined here. Yet, this seems to be the only explanation of the fact that during the recent negotiations on a wildlife agreement in principle with the Dene and Metis, the territorial government cast itself as guarantor of the interests of resident non-Native wildlife users. Neither the Native majority in the Assembly, nor the Native status of the Minister and the Deputy Minister of Renewable Resources seem to have affected the view of the GNWT that the aboriginal interest in wildlife was in effect a "special interest", to be balanced against the "public interest".

None of this should be surprising; nor is it in any way unique to the North. It is the experience of virtually every farmer, fisherman, or labour politician who reaches the top, especially as an individual rather than as a member of a governing party that is itself committed to change.

With the growth of a professional management staff, the tendency will be to draw Natives into the bureaucracy in management and enforcement capacities, not on the basis of their separate and distinct experience as harvesters, but rather on the basis of their formal education. As employees of the state management system, they will be expected to absorb the professional knowledge, culture, and ideology of that system, rather than to bring to it their own (or their community's) indigenous system of knowledge and practice. The contribution of the indigenous system, as noted in the previous section, will be restricted to public advisory boards, which, unless they have access to independent professional support, will in all likelihood fight one losing battle after another against the professional opinion of, and the expert articulation of it by, department staff.

In view of these considerations, it appears that whether or not Natives continue to be a numerical majority in the N.W.T., public government institutions are not promising avenues through which to promote greater scope and authority for an indigenous management system. It follows that in the event of division in the N.W.T. and, in

particular, the establishment of public government institutions in Nunavut, the same factors will continue to be at work, and the same results are likely to follow.

3.2.3 Local Institutions

What about new local or regional institutions? I have already referred to the Hunters and Trappers Associations (HTA's). Are these the vehicle for revitalizing the indigenous system? The present impediments are two fold. One is that, from the perspective of the state management system, these associations are too easily seen as a convenient rung at the bottom of the hierarchy through which to implement state policy. The other is that, from the perspective of their members, they may be seen as nothing more than a convenient channel through which to communicate with the state, and their executives may be chosen only as "talking chiefs". It is possible that the Inuvialuit Game Council, recently established in accordance with the Inuvialuit Final Agreement, will transcend such roles. I am sure there will be important lessons to be learned from the operation of that council, some of which we will hear about tomorrow.

Perhaps the most interesting possibilities are to be found in Alaskan examples (Langdon 1984). The Alaskan Eskimo Whaling Commission and the Eskimo Walrus Commission were established and controlled by harvesters themselves, and have played a major role in resolving conflicts with external forces to the harvesters' advantage. Similar initiatives have been taken successfully by Native waterfowl harvesters in south-western Alaska.

The establishment of user advisory boards, such as the Caribou Management Board, in the N.W.T., is a promising initiative, but I think it is too early to judge their effectiveness. Some have observed that the unexpected abundance of caribou in the Keewatin has made that board's job easier. Scarcity will provide the real test. As well, the question arises as to whether these species-specific boards are intended to proliferate (and if so whether they might get bogged down in inter-board jurisdiction problems), or to be prototypes for comprehensive wildlife management boards as envisaged in the claims settlements. Jim Bourque suggested yesterday that the latter is the case, and I hope he is right. We may nonetheless observe that these boards are at present only advisory, and heavily dependent on their technical staffs.

As for the new economic organizations, whatever their specific mandate, the majority of them, and perhaps especially the most powerful ones, will assume a corporate form. Indeed, many will be created for the purpose of receiving and administering the assets to be transferred from the state as a consequence of claims agreements. This process will, for two reasons, create further divisions of interest within the Native population of the type described in the previous section. One is that lands and resources will become corporate rather than communal assets. The other is that there will be growing economic pressures to develop non-renewable resources or to use lands for settlement and industry in ways that conflict with the maintenance of the renewable resource base and the traditional system of tenure and management. These tendencies have been described extensively in Alaska (most recently by Berger 1985), and there is no need to elaborate on them here.

In the N.W.T., there is a growing number of Native corporations and joint ventures with interests in conventional forms of economic development based on the commercial exploitation of resources for export. Even when the corporate assets are renewable resources, the possibility of fundamental conflict between private commercial exploitation and local domestic harvesting arises. The reindeer herd at Tuktoyaktuk is a noteworthy example (Nasogaluak and Billingsley 1981). Given the commercial orientation of any economic development corporation, Native owned or not, its professional managers, if not also its board of directors, will have clear obligations and propensities that may well be at

variance with the maintenance of the indigenous system of resource use and management. What may also become increasingly evident is that the effective control of renewable resource development, and thus to some extent management, may pass from Native producer organizations like Hunters and Trappers' Associations or co-ops to Native development corporations, which may be more prone to viewing renewable resources as liquid assets rather than fixed capital.

4.0 CONCLUSIONS

Devolution is a necessary but not sufficient condition for conservation. Self-management, in a context where the necessary self-regulating mechanisms can operate effectively, is also needed. How do we get there? Let me be clear that I am not advocating the dissolution or abandonment of the state management system. I do think, however, that we require an integration of the state and indigenous systems to a much greater degree than is likely to occur under any of the existing mechanisms of devolution. Only such an integration can result in the best features of both systems being brought to bear on the modern problems of conservation that neither can solve alone.

Self-determination, even if achieved (and, in the sense originally proposed by Native organizations in the 1970's, that seems unlikely) could not mean simply turning the clock back to a time when the indigenous management system both prevailed and worked. The North cannot return to the isolation of those years, and few want it to. The maintenance of political and economic rights in a plural and interdependent society must rest on a widely accepted moral claim. Sovereignty over resources, that is, the prerogative to allocate and manage them, can be neither asserted nor maintained without the evidence of competent institutions. That demands initiatives by Native organizations and receptivity on the part of governments. The effective reassertion of self-management will therefore not be easy.

Without such re-establishment, however, devolution alone is a deception for givers and receivers alike. The existing trend is to devolve some powers to, or at least to gain the participation and involvement of, agencies or individuals who, although either being Native themselves or acting in a Native interest, may not actually represent the interests of harvesters as such, or be able to make binding commitments on their behalf. To the extent that such agencies or individuals are seen by harvesters as having been co-opted by an alien and unacceptable system, non-compliance and non-co-operation will result.

Harvesters can be expected to maintain their own systems of conservation at local levels in relatively stable, non-competitive situations. But these are the conditions least likely to pertain in the future as better road and air access to remote hunting grounds is provided and as more non-Native residents and visitors seek to make greater and more diverse uses of wildlife in the N.W.T. The need for security of tenure and of access to wildlife is clear.

Native northerners are increasingly aware that their access to renewable resources is very favourable compared with that of Native people in other North American jurisdictions. At the same time, there continues to be an abundance of fur, fish, and game accessible to them and to others who value these resources. Unfortunately, this happy circumstance is unlikely to be sustained if the management system there continues to evolve as I have suggested it might. That trend is strong, but it is not inevitable. Maintaining the distinctive (and, I would argue, viable and sustainable) relationship between humans and wildlife in the N.W.T. that has persisted to date will require the development of innovative

institutions, arrangements, and practices that genuinely incorporate the strengths of the two management systems and provide effective bridges between them.

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RESOURCE CO-MANAGEMENT IN WOOD BUFFALO NATIONAL PARK:

THE CREE BAND'S PERSPECTIVE

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ABSTRACT: *Treaty 8, signed in 1899, confirmed that the future of the Fort Chipewyan Cree People would be largely sustained through our continued relationship with and our reliance on the land and its resources. The recent Agreement between our Band and the Federal Government confirmed our continued use of renewable resources within traditional territory. As part of this agreement, the Fort Chipewyan Cree People were guaranteed continued benefits from renewable resources within Wood Buffalo National Park. As beneficiaries of these resources, it naturally follows that we would have a major role in the management of the Park. Our values and objectives and those of the Park need not be in conflict. We are close to the Park in both the geographic and cultural sense, and many of our opportunities for economic development are limited to those very resources which the Park was created to protect. We are concerned about the wise management and utilization of these resources to ensure their continued availability and productivity. With this common goal, our Agreement is the starting point from which we and the Park can mutually explore, develop, implement and evaluate policies and programs which affect us all. Co-management, as expressed in the various provisions of our Agreement, recognizes our unique relationship to renewable resources, our requirements for their use, and our strong commitment to their protection. It provides us the opportunities to participate in and contribute towards resource decision making, management and development. In this way we perceive co-management as a cooperative approach which furthers the interests of and benefits to both the Park and our people.*

1.0 INTRODUCTION

Treaty 8, signed in 1899, confirmed our people's (The Cree Band's) future would be largely sustained by our continued relationship to and reliance on the land and its resources. Settlements on reserves was not compulsory, the assistance in terms of ammunition and twine for making nets, and the promises concerning our hunting, fishing and trapping ways formalized our role as a people living off the land.

Our use of the fish and wildlife resources in Wood Buffalo National Park has a history which predates the creation of the Park by several hundred years. During this time, traditional areas of use have been established. These areas mainly comprise the southeastern portion of the present Park, particularly in the Peace-Athabasca Delta, and in all are about 1/5 of the Park's total area.

Recognition of our historic and present use of the renewable resources in our traditional areas showed itself in the agreement between our Band and the federal government for the settlement of our land claim under our treaty. As part of the total agreement reached in 1985, the federal government promised our people would be

guaranteed the continuing ability to benefit from the renewable resources within Wood Buffalo National Park.

2.0 CO-MANAGEMENT OF RENEWABLE RESOURCES

With this brief historical background we can now turn our attention to the question of co-management of renewable resources in the Park. Perhaps the best way to look at the question is by examining key areas of our agreement within the context of the purpose and objectives of park management.

In the 1979 Parks Canada Policy Document, it is stated:

"A management plan is a guide approved by the Minister, by which Parks Canada administers the resources and uses of a particular National Park. Each plan is an expression of Parks Canada's policies for the National Park within its regional context."

According to this purpose, the management objectives for Wood Buffalo National Park are:

1. Parks Canada will protect and preserve the wilderness character of the Park. This includes ensuring the survival of habitats, wildlife populations, and the land and water systems.
2. Parks Canada will protect the cultural heritage resources of the Park which include archaeological sites, historical development, and use of the Park based on hunting, fishing and trapping activities.
3. Parks Canada will provide appropriate opportunities for the public to appreciate, understand and enjoy the resources of the Park.
4. Parks Canada will ensure that the planning, management and development of the Park are as compatible with local and regional concerns as possible.

Within this context, we perceive the fundamental principle of co-management to be the recognition given to our strong commitment to resource conservation and protection, and our role as a partner with Parks Canada in upholding this mandate. Our values and objectives and those of the Park do not have to be in conflict. We are close to the Park in both the geographic and cultural sense, and economic development opportunities available to us are limited to those very resources which the Park was created to protect. We are just as concerned about those fragile resources, and about the wise management and utilization of them to ensure their continued availability and productivity.

Another important aspect to co-management is the recognition given to our unique relationship to the resources and our requirements for their use. Throughout our history we have depended upon the fish and wildlife resources for our sustenance and economic income. Trapping was once one of the most important industries in terms of employment, and generated an estimated \$1,000,000 annually for Fort Chipewyan residents. Resource harvesting was and still remains a part of the Park's and our historic and cultural tradition.

Co-management acknowledges that with intelligent planning, mutually beneficial arrangements for resource protection and resource use can be implemented. Under Schedule 6 of our Agreement, Wildlife Harvesting Rights, it is agreed Parks Canada will

continue to manage the resources within the Park including our traditional lands in a manner consistent with the National Parks Act, regulations, the Parks Canada policy and the Park Management Plan. But, with its firm commitment to define a set of rights for our use of the fish and wildlife resources, the traditional area of our use is to be respected. It is intended there be created a system of harvesting rights, priorities and privileges that reflects both the traditional and current levels respecting the patterns and character of our harvesting. All our Band members who have the right to hunt, fish and trap in the traditional lands will have those rights protected. All types of wildlife harvesting will be allowed with certain limitations pertaining to humane killing, existing third party interests, and regulations required for conservation.

One of the purposes of co-management, then, is to ensure environmental protection and preservation of the resources, while equally ensuring our people's use and benefits from those resources. If the government's guarantee of continuing benefits is to have any value to us, that management must be undertaken in relation to our use of the resources and with due consideration given towards measures needed to safeguard the resource base on which we depend.

Take the low water levels in the Peace-Athabasca Delta as a case in point. It is not intended here to discuss the effects of Peace River regulation on the fish and wildlife resources except to say studies carried out have shown that since the construction of the Bennett Dam, environmental conditions in the Delta have steadily deteriorated over the past 19 years. Water management schemes have been ineffectual in maintaining the habitats for fish and wildlife, and have ultimately impaired the productivity of those resources.

Yet, studies carried out during the past 5 years have indicated there is sufficient potential for planned resource management which includes wetland restoration and habitat enhancement. Our view is that management of the Delta should be carried out in a park setting very much as used to exist under natural conditions before the flow of the Peace River was regulated. Parks Canada, on the other hand, is committed on maintaining natural processes of the Park, and duplicating those processes by manipulation if necessary. This way co-management is seen as the process whereby the achievement of National Park objectives and our requirements and concerns can be addressed. As an example, under our agreement the Federal government has agreed to make every reasonable effort to correct man-induced changes to the natural water regime in the Peace-Athabasca Delta basin.

In keeping with Park's objective of providing opportunities for public appreciation, understanding and enjoyment of the resources, we also see co-management as the opportunity to create and promote other compatible forms of resource use. Aside from the more congenial occupations of hunting, fishing and trapping, Parks Canada has acknowledged that other economic development opportunities from the renewable resource sector have potential for our use and development, and can contribute significantly to our self-sufficiency. Recreation and tourism opportunities such as hiking, canoeing, bison and bird watching and nature study, and the related services and facilities required for the accommodation of visitors can successfully be integrated with the wilderness character of the Park and with the Park's resource protection objectives. Under our agreement, Parks Canada has promised to help create employment for our Band members in various tourist related activities should sport camps be established in the Park. Band members will also be given the right of first refusal for any jobs created by Parks Canada regarding sport fishing expeditions within the traditional lands area. These efforts legitimized the fact that Park resources can be managed to the best economic advantage to our Band.

As users of and beneficiaries for the renewable resources, it naturally follows we would have a major role in the management and administration of the fish and wildlife resources in the Park. In our capacity as co-managers of those resources, our agreement provides for a Wildlife Advisory Board to make sure our rights and privileges in our traditional land use area are protected. The Board is to be made up of 8 members; 4 from our Band of whom 3 will be hunters/trappers, 3 from Parks Canada and the superintendent of the Park who will not have a vote. Parks Canada will provide the board, to be headquartered in Fort Chipewyan, the necessary administrative support services to assist in its operations.

This Board gives us the authority in resource decision-making, planning, implementation and evaluation. It will advise and recommend upon matters affecting our members within the traditional lands, matters such as general renewable resource harvesting, open seasons and proposals for new or amended game regulations. The Park's minister shall consult this board on any proposed change to legislation and regulations affecting the traditional lands. Subject to the approval of the Governor-in-Council, the board shall have the exclusive power to make regulations concerning the qualifications of our Band members for hunting permits and the number of those permits to be issued in the traditional land use area.

Joint management and administration is taken one step further. The Board shall be empowered to advise the Park's minister on general matters regarding wildlife management in the Park. These matters include research requirements necessary to promote sound resource management, research proposals and applications pertinent to management, and the promotion and encouragement of training and employment of our people in the various fields of wildlife research and management.

In addition, the Board will participate in the future planning and screening of proposals which may affect our harvesting activities, and may make economic assessments with respect to harvesting issues which could affect the future livelihood and economy of our Band. By working in cooperation we and Park's personnel can identify and evaluate potential negative impacts on the resources which we are both committed to protect. In view of the clauses in our agreement concerning compensation to us for loss of and damages to our economic livelihood associated with the hunting, fishing and trapping rights in traditional land use areas, this function of the Board, by necessity, demands our active participation and input if co-management of the resources is to have credibility.

In other ways, our direct participation in the management and administration of the Park's resources is assured. Parks Canada has agreed to use its best efforts to train and employ our Band members for positions in its operations. Having our Band members as Park wardens and naturalists will not only keep the lines of communication open, it will maintain our awareness, and strengthen our involvement in, and contribution to, conservation and resource co-management.

In all, our agreement with the federal government is the starting point from which we and the Park can mutually explore, develop, implement and evaluate policies and programs which affect us all.

3.0 CONCLUSIONS

Co-management, as expressed in the various provisions of our agreement and within the context of the Park's purpose and objectives, recognizes our unique relationship to the renewable resources, our requirements for their use, and our strong commitment to

their protection. It provides us with the opportunities to participate in and contribute toward resource decision-making, management and development. In this way co-management is a cooperative approach which furthers the interests of and benefits to both the Park and our people.

RESOURCE CO-MANAGEMENT IN WOOD BUFFALO NATIONAL PARK: THE NATIONAL PARKS' PERSPECTIVE

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***ABSTRACT:** The purpose of this paper is to examine some aspects of the operation of a northern national park faced with the imposition of a modified "co-" or "joint" management regime as a result of the settlement of Native land claims. The presentation describes the park and the historic Native involvement context in which it operates -- reflecting an inexorable evolution from outright paternalism to participation and thence, perhaps, to power. The concept of joint management of a national park is discussed with particular reference to the co-management provisions of the proposed Fort Chipewyan Cree Band land claim settlement. These provisions are examined in terms of the opportunities they might offer for improved resource management in the national park and also on the constraints they might impose. Comment will be made on the major questions which remain to be answered in this, as yet unproven, management strategy. Is there a mutuality of objective? When we talk of joint management and traditional use, do we share the same understanding of what those terms mean? Does co-management simply imply joint authority or does it impose joint responsibility and accountability as well?*

1.0 INTRODUCTION

Sometime during 1986, it is likely that the Government of Canada and the Fort Chipewyan Cree Band will sign a land claim settlement thus ending an 87 year wait by the Band. This claim will finally compensate the Band for their agreement to Treaty No. 8 in 1899. The terms of the settlement will include the usual components of cash and land. Similar to other recent land claim settlements and settlement proposals, the settlement will also provide for an element of control or influence over the management of land regarded by the Fort Chipewyan Cree as their traditional lands.

There is, however, a significant difference between this and other land claim settlement proposals. In the majority of prior land claim settlements, the land over which control or preferential influence has been considered was "unalienated" Crown land. In the case of the Cree Band settlement, the influence will be over a portion of Canada's second largest national park - a park which is, at the same time, a World Heritage Site. The impact of a settlement over land which has been alienated or for which there is a long standing vested interest is a matter of some curiosity to observers.

The purpose of this paper is to examine the implications of this settlement from the perspective of a park manager. The paper will describe some aspects of the history of of the park in order to put the settlement and the broader question of joint management into context. The paper will also identify a number of the questions which have yet to be resolved before it is certain that co-management will work in that specific environment.

2.0 THE PARK

2.1 HISTORICAL PERSPECTIVE

Established in 1922, Wood Buffalo National Park was, until recently, the largest national park in the world and certainly is the only one in Canada with a long standing tradition of Native subsistence use and involvement. The original purpose of the park, not surprisingly, was to protect the bison. Government surveys in the late 1890's indicated that the remnant Wood Bison population found only in the area that was to become the park was in trouble and that measures were required to ensure the survival of the sub-species. These measures involved hunting prohibitions and, somewhat later, according protected status to critical bison habitat.

Although accorded national park status, Wood Buffalo was not managed by Parks Canada or its predecessors but by the Northern Affairs arm of the Department of Indian Affairs and Northern Development. For much of its early history, the park's mandate was unclear to most observers. Potyondi (1981), in his extensive history on the park, uses the term "dual allegiance" to describe a management regime targeted ostensibly for preservation but also for economic development and Native welfare.

Serious and expensive attempts were made repeatedly to manipulate park habitat to maximize fur production. Dams were built and rebuilt in efforts to increase the muskrat harvest. Commercial bison harvesting was attempted complete with massive wing fence and corral systems, abattoirs, meat inspection and distribution through southern meat packing firms. There were even efforts to establish a commercial Goldeye fishery in Lakes Mamawi and Claire - efforts which led to exhaustion of the stocks of this species for many years.

Interspersed with periods of emphasis on economic development were periods of emphasis on the resource protection goals more commonly associated with national parks. In the very early days of park existence, consideration was given to total hunting and trapping bans and other measures to ensure wildlife protection. Sir 964, when authority for the park was assumed by the National Parks Branch, attention has been focused on attempts to reconcile the "dual allegiances".

Although the results of these various initiatives have not been impressive, they have reflected a sense on the part of government that the land which comprised Wood Buffalo ought to be managed as much as possible for the benefit of the people who have traditionally occupied it. On the negative side, constantly changing mandates and objectives have created considerable confusion amongst managers and local people alike. In many respects, this confusion over the objectives of the park continues to exist and is likely to serve as the major barrier to peaceful co-existence and effective co-management.

2.2 NATIVE INVOLVEMENT

The history of Native involvement in Wood Buffalo is not unlike the efforts to established resource-based economic ventures in the park - well meaning but not effective. For almost the first fifty years of its existence, the park was characterized by government officials acting in what they perceived to be the best interests of local Native people. The very first act of the park management, probably in the form of the local Indian Agent, was to determine who could continue to hunt and trap in the park and who could not. There is very little evidence that this was done other than arbitrarily and the results remain contentious to this day. The rules and regulations regarding hunting and trapping in the park were made largely without consultation and enforced, it would appear, with

inconsistency and even whimsy. The "style" of management fostered a climate of distrust and cynicism which continues to exist today.

The general "liberalization" of North American society during the 1960's and 70's brought with it increased emphasis on participatory decision-making and the management of Wood Buffalo was not immune to the trend. Consultation became the order of the day and attempts were made to establish structures which would permit local people, and particularly Native people, effective input into management. Band Councils were regularly consulted about proposals which would affect their members. Attempts were made to establish a park-wide Hunters and Trappers organization which would serve as the focus for interchange. Trapping areas were consolidated into "Group Trapping Areas" and members of these "Groups" were given substantial influence over decisions affecting their area.

3.0 JOINT MANAGEMENT

The effectiveness of these efforts to introduce an informal "joint management" regime to Wood Buffalo was jeopardized by two factors: a failure to agree on a practical definition of "consultation" and the diversity of interests expecting and deserving to be consulted. "Consultation" in the mind of government is the process of seeking a range of contributions which will be considered when decisions are made. In the minds of many interest groups, however, "consultation" ought to be the process of seeking direction. "Ask us what we want and implement it." If the response is not implemented, consultation is deemed not to have occurred. For Native groups with a proprietary perspective on the land about which decisions are made, the distinction is critical.

The diversity of interests has been an even greater barrier. The size of the park, the number of different communities in and around the park, and the number of different Native organizations have created an imposing array of separate interests. Table 1 lists the interests with which the park must deal regularly on matters germane to Native involvement considerations.

Table 1. Formal Native Interest Groups, Wood Buffalo National Park

Fitz Smith Native Band	Little Red River Band
Fort Chipewyan Cree Band	Fort Chipewyan Metis Association
Fort Smith Metis Association	Hay River Dene Band
Fort Resolution Dene Band	Fort Smith HTA
Wood Buffalo Park HTA	Group Area Leaders
(Fort Chipewyan)	Registered Trapline Area Holders

It would be a mistake to assume that, because the organizations listed are Native organizations, they share common goals and aspirations. There is, of course, a certain homogeneity of interest in a generic sense but in practical terms, each organization must be dealt with separately when issues or concerns which impact on them are involved. Nor do the organizations exist at the same level with respect to political legitimacy. Bands, for

example, are accorded formal legal status by the Indian Act to represent the members of the Band. Metis Associations or Hunter and Trapper organizations may not have the same status. But they have practical impact nonetheless.

The Group Trapping Area approach used in Wood Buffalo is an example of where there might be conflict between entities which both have legal status. Figure 1 provides an illustration of the division of the park by Group Trapping Areas and Registered Trapping Areas. Trapping in each Group Area is essentially co-managed by the Group Area members and park officials. Legal status for the Group Trapping approach is provided under the Wood Buffalo Game Regulations and, as the trappers have a somewhat proprietary perspective toward their areas, Group Area Leaders tend to be very serious in assuming their responsibilities. But the Group Area members are also Band members in most instances. This raises the question as to where the Group Area responsibilities stand and Band responsibilities start - or vice-versa.

Figure 2 attempts, somewhat subjectively, to divide the park into "traditional areas of interest" based on a degree on historical usage and to a degree on expressions of contemporary attachment. It is apparent that not all of the groups in the above list are represented on the "traditional areas" map. This results from the reality that the interest of some groups is subject-based rather than geographically-based. These interests would contend that their influence transcends any geographical boundaries.

The challenge comes in determining who should be involved in what decisions and what the degree of influence ought to be. For example, the Fitz-Smith Native Band and the Fort Smith Metis Local have indicated that they ought to represent the interest of Native hunters and trappers in much of the north end of the park. The Group Area Leaders have given no indication that they are prepared to accept that their interests are to be represented by those two organizations. In fact, they have provided signals to the contrary. Meanwhile, the hunters in the north end are completely unorganized and seem, at least individually, to feel that no other body is appropriate to represent them. At the same time, the Dene-Metis are negotiating a land claim which will impose an entirely different joint management structure on the north end of the park but the Dene-Metis participants represent only a portion of those presently eligible to hunt and trap in that section of the park. Its hard to tell the players without a program and nobody has printed up a program yet.

4.0 THE CREE LAND CLAIM

The Fort Chipewyan Cree Land Claim settlement will be inserted into the middle of this existing complexity. The principle provisions of this settlement as related to joint management are as follows:

1. Guarantees of hunting, trapping and fishing rights for all Cree Band Members in the "traditional area of interest".
2. Establishment of a Wildlife Advisory Committee to advise the Minister on many aspects of the management of the "traditional area of interest". The Cree Band will have a majority of the voting members on the committee.
3. According to the Wildlife Advisory Committee, the authority to determine who, amongst Cree Band members, will receive hunting and trapping permits for the "traditional area of interest" in any given year and, by implication, to determine how many permits will be issued.

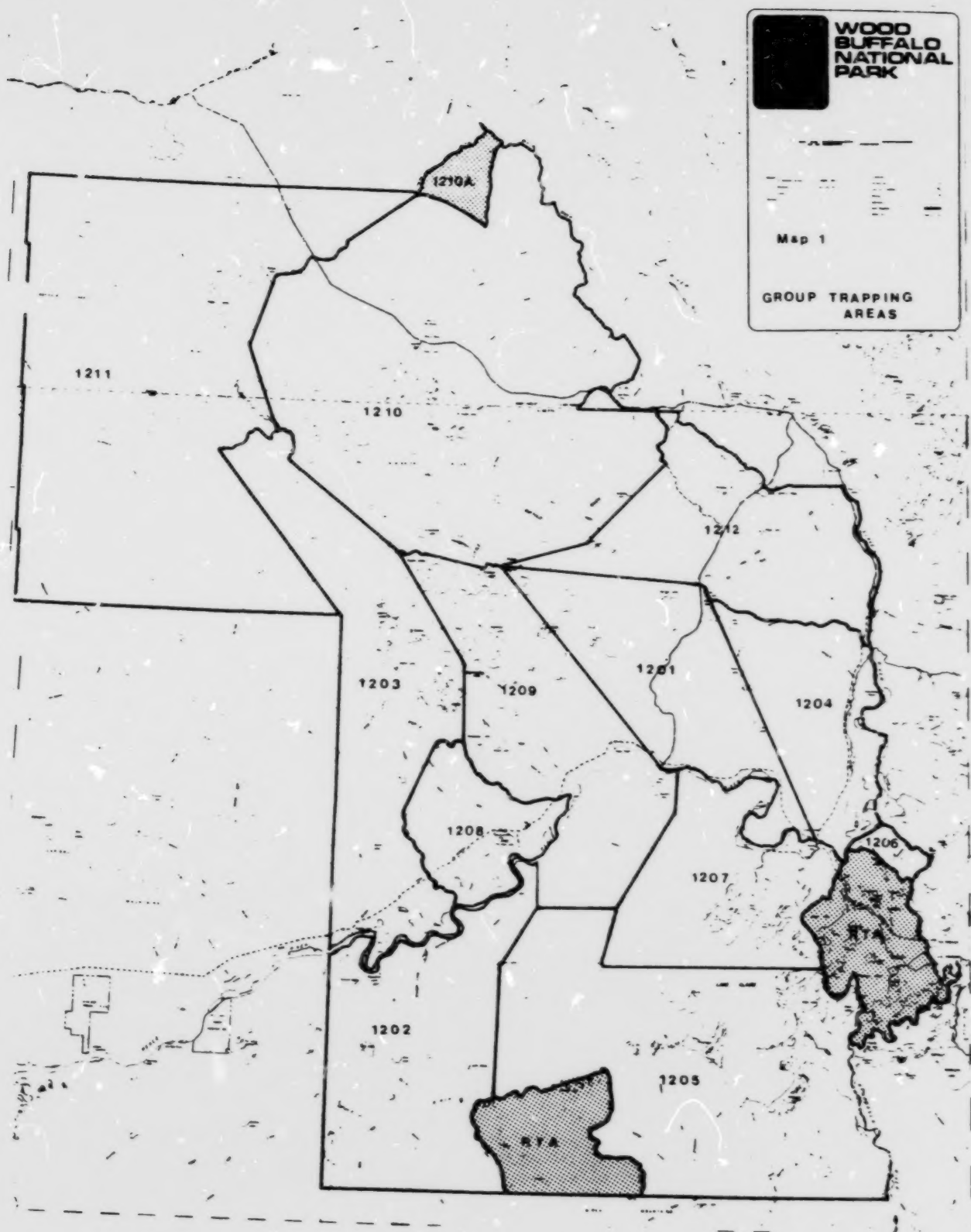


Figure 1. Group trapping areas in Wood Buffalo National Park.

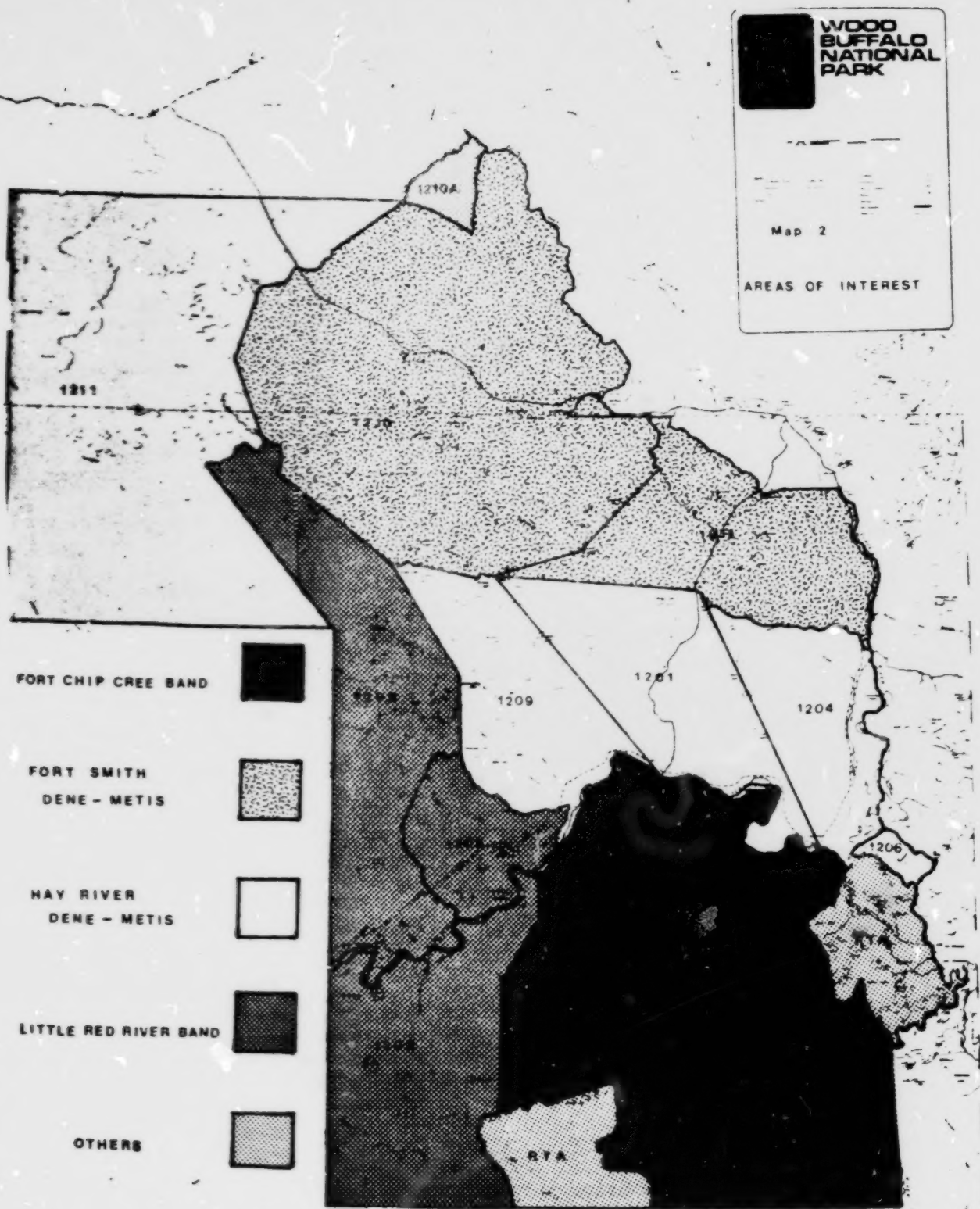


Figure 2. Traditional areas of interest of Native groups within Wood Buffalo National Park (based upon historical use and contemporary attachment).

4. "Rights of first refusal" on any economic activities which might be developed in the "traditional area of interest".
5. Preferential access to training and employment opportunities in the park and particularly the southern end of the park.
6. A commitment that the Government of Canada will make its best efforts to re-establish the natural water regime in the Peace Athabasca Delta - thought to be disrupted by construction of the Bennett Dam.

4.1 SETTLEMENT BENEFITS TO PARK MANAGEMENT

Finalization of the settlement will yield a number of tangible benefits to management of the park. First, uncertainty about the integrity of the land base in that portion of the park will be eliminated. In 1972, former Parks Minister Jean Chretien made a commitment to the Band that they could select up to 93,000 acres of their entitlement from within the park. Although, this amount of land would be only a small fraction of the park's 14 million acres, withdrawals could be made in critical and resource sensitive areas if the Band so chose.

Second, the issue of rights and privileges has been addressed and resolved and thus many of the questions which continually arise as to what "rights" exist have been answered.

Third, a formal consultative/advisory forum has been established to which all parties will have access. The role of the forum is clear and no longer will park management face the uncertainty of trying to determine who they ought to consult with on what issues.

Fourth, through the Wildlife Advisory Committee, Parks Canada has formal access to a significant body of knowledge and expertise on the natural resources of the area and the implications of human use of those resources.

Fifth, the Wildlife Advisory Committee will provide a vehicle for conflict resolution -- a vehicle in which many of the people who use the land have vested interest. This will lead over time to a reduction in distrust and cynicism toward park managers who have been perceived in the past to make decisions arbitrarily and with insufficient understanding of the situations.

Sixth, the Cree Band now has a form of proprietary relationship to the land encompassed in the traditional area. This perspective will undoubtedly lead to a more organized assumption of responsibilities for long term stewardship of the land.

Seventh, settlement of the agreement will more formally focus the attention of the Cree Band on deriving economic benefits from the land. Because the land is still a national park, limitations will exist but tourism will be one of the more obvious avenues. Parks Canada is most anxious to provide more people with the opportunity to experience the wonders of Wood Buffalo and the involvement of the Cree Band will be instrumental in achieving this objective.

4.2 THE UNANSWERED QUESTIONS AND CONCERNS

The concept of "joint management" has, to date, been applied only to the management of specific wildlife species or populations in the north. The Beverly-Kaminuriak Caribou Management Board is one of numerous examples which might be

cited. "Joint management" applied to more general purpose land management, on the other hand, is a largely untested concept in the Canadian context.

The precedent for such management agreements, at least as they apply to national parks, has been established by the C.O.P.E. North Yukon Agreement which establishes a variety of different committees to review and advise on the management of North Yukon National Park and the Porcupine caribou herd which spends considerable time in the park during its annual migrations. This agreement is, however, new and therefore provides little practical guidance as the efficacy of the approach.

In reviewing the proposals of the Cree Land Claim settlement, it would appear that there are several areas which might cause one to question whether the proposed agreement as it relates to "joint management" is workable. These areas include concerns with respect to mutuality of objective, levels of authority versus accountability, the protection of other interests, the impact of partitioning the park, etc.

4.2.1 Mutuality of Objectives

As a national park, Wood Buffalo has a number of objectives which are ingrained in legislation or established by tradition. With the exception of one clause, the proposed settlement is mute on the subject of park objectives. The clause reads as follows:

"Parks Canada will continue to manage the lands and resources within the Park including the Traditional Lands according to the National Parks Act, Regulations, Parks Canada Policy and Park Management Plans. Emphasis will continue to be placed on protection and conservation of natural resources in the park."

It is critical, if "co-management" is to be positive in mood and effective in result, that both parties understand and agree to what exactly the above clause entails. Already, there are informal proposals being discussed which would involve water level manipulation to improve furbearer habitat; proposals for the growing and harvesting of wild rice; proposals for the large scale cutting of firewood as an economic enterprise. All of these proposals are inconsistent with the traditional model of a national park and with conventional application of National Parks Policy. These proposals would indicate that not all parties fully understand the limitations imposed by national park status.

4.2.2 Advice versus Authority

In negotiating land claim agreements in the north, the objective of Native organizations seems to be gain control or significant influence over management of the land. In some settlements, the provisions appear to be weighted de facto towards effective control. In the Cree Land Claim settlement, the emphasis is on advice with Parks Canada and, specifically, its Minister retaining control. It is clear that those responsible for the land claim negotiations appreciate the distinction. It is less clear that rank and file Band members understand. Will this be a source of ongoing acrimony? Evidence at this early date, is that some adjustment and clarification will be required for the benefit of Band members and that they ought not regard the settlement as a vehicle which will satisfy all their desires.

4.2.3 Authority/Responsibility/Accountability

Authority for the management of national parks is conferred via the National Parks Act and its attendant regulations. The obligation or moral and legal responsibility for park management is to the Canadian people through Parliament. By definition, formalized co-management regimes diminish the outright authority of the government party to the regime without, at the same time, diminishing the legal and moral obligation.

It would seem in principle that all parties to a co-management regime must be prepared to share responsibility and accountability to the degree that they share authority. Those that operate national parks are responsible and accountable to the Canadian people. Band administrations with whom co-management agreements are struck are responsible and accountable to their members. There is significant potential conflict implicit in this dichotomy.

In a more practical vein, land is conventionally managed through the promulgation and enforcement of land use control mechanisms normally embodied in regulations. Non-government parties to co-management regimes lack the legal authority to enforce these regulations at present. Further, it is questionable whether there is the political will amongst Native bands entering into such agreements to accept the responsibilities of enforcement. Enforcement is the truly unpleasant aspect of land management and it would seem patently unfair that only one of the parties to the agreement would have to solely assume that responsibility. Even at the risk of stirring up controversy, it must be asked of those proposing joint management arrangements whether they are prepared to assume the responsibility along with the authority.

4.2.4 Protection of Other Interests

The proposed land claim settlement accords to the Fort Chipewyan Cree Band a preferential status with respect to the "traditional lands". The Wildlife Advisory Board will be the dominant influence on its management. There are, however, other interests. Metis people, for example, have been hunting, trapping and fishing on those lands for almost as long as the Cree. Non-Cree Band people have been deriving economic benefits from use of the land for tourism purposes. What status do these people have upon signing of the agreement?

The Agreement does make provisions for the protection of existing third party interest but it remains to be seen whether those interests can be passed on to the children as has been the tradition. In addition, these other interests lack membership on the Wildlife Advisory Council. How do they, in future, influence decision-making?

4.2.5 Partitioning of the Park

The Cree claim is but the first in a series of Native land claims which will affect the park. Negotiations on a sub-agreement of the Dene-Metis claim involving the north end of the park will commence shortly. The cumulative impact of these claims in "partitioning" the park for management purposes is a concern.

As has been shown, the Cree claim establishes a "traditional area of interest" over which the Cree Band has preferential influence. Initial proposals from the Wildlife Sub-Agreement of the Dene-Metis negotiations indicate that much the same pattern will be followed. The Sub-Agreement (as yet unapproved) provides for one central Advisory Council covering the entire claim area and Local Advisory Council dealing with specific areas within the claim area. There could be as many as three local councils covering the northern portion of the park. A Park Sub-Agreement may reduce that to one.

It is unlikely that all councils will seek to impose identical management regimes and philosophies on the Park. Requests for different strategies will emerge and these are likely to lead to requests for different regulatory mechanisms. This will have the impact of making development of holistic management approaches very difficult. It will also become exceptionally confusing to both park staff and park users alike. It will be virtually impossible for the uninvolved public to understand what is going on.

5.0 CONCLUSIONS

From the foregoing it may be concluded that introduction of a formalized "joint management" structure to Wood Buffalo National Park will offer opportunities for improved management of the park and improved relations with local Native users. The Agreement will legitimize a vested interest and provide a mechanism whereby issues and concerns might be addressed in an organized fashion. A forum for conflict resolution will result from the settlement and Parks Canada will have access in a formal fashion to a significant body of knowledge and expertise germane to park resource management matters.

Signing of the agreement however will not necessarily ensure smooth functioning of the structure. It remains to be seen whether both parties to the Agreement share the same goals and objectives and are prepared to assume the same levels of responsibility and accountability for management of the area concerned. Worries also exist regarding the impact of the settlement on other interests.

The fact remains however that the agreement, notwithstanding its possible shortcomings, represents a positive step forward in Native/park management relations. It is unlikely that the inconsistent, arbitrary and poorly explained decision-making of the past will continue under the aegis of the new regime. It is also clear that the structure will serve as a bridge between the park and its Native users. This is indeed a major accomplishment.

6.0 LITERATURE CITED

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CO-MANAGEMENT OF THE RECREATIONAL CHINOOK FISHERY IN THE STRAIT OF GEORGIA

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ABSTRACT: *The Pacific Salmon resource off the coast of British Columbia is comprised of five species of salmon -- chinook, coho, pink, chum and sockeye -- and are an international resource used by commercial fishermen, Native people and recreational fishermen. What does co-management mean in the context of the Pacific Salmon fishery? Perspectives of the various user groups are reviewed and conflicts discussed. Future opportunities and expectations for use of this resource are also considered.*

1.0 INTRODUCTION

As Chairman of the Sport Fishing Advisory Board and a member of the Minister of Fisheries Advisory Council, I am going to speak on the co-management of the Chinook Salmon stocks in the recreational fishery in the Strait of Georgia.

I grew up on the water in Horseshoe Bay just outside of Vancouver. I began work in the marine environment at a very early age and was operating my own charter boat at thirteen years of age. I am the third generation to manage and operate a marine complex in Horseshoe Bay.

I believe it is important to explain that the Sport Fishing Advisory Board is an organization created by the Minister of Fisheries to advise on sport related matters. The Board has been in existence since the 1960's and is comprised of twenty-two members from throughout B.C. and from all walks of life. I should emphasize that the Board's terms of reference are such that the primary users of the resource have a majority of seats on the Board and hence control. Primary users are fishermen or individuals not earning a livelihood from the resource. The secondary users (those in the recreational industry) have a minority position.

2.0 WHAT IS CO-MANAGEMENT?

Co-management has many different meanings and interpretations. I listened to Mr. Ed Newman, President of the Native Brotherhood of British Columbia at the Fifty-Fifth Annual Native Brotherhood Conference in Massett, B.C., interpreting his understanding of this new found joint husbandry of the resource. His understanding of the process and results was anything but complimentary. I am more of an optimist. If we look on our resource as belonging to the people of Canada; then we have a responsibility to ourselves and future generations to protect and nurture these God given resources. The day of passing the "responsibility" to big brother is gone. It is our task to provide the check and balance to ensure all peoples and all levels of government are acting responsibly to ensure the proper husbandry of our resource.

The co-management of the Gulf of Georgia Chinook stocks came about by an environment of confrontation. "The Canada - U.S. Salmon Interception Treaty" was a "fait

accompli" before the recreational fisherman realized what had happened. This treaty placed a limit on the catch of Chinook in the Gulf of Georgia. This allocation or quota meant our fishing could be closed in its middle of our tourist and fishing season. The strength of the recreational fishing community is the sheer numbers. The industry is comprised of many "Mom and Pop" operations and their constituents run into the hundreds of thousands. The word went out, "grab the bed sheets and ride." And ride we did. We created the political will in Ottawa to address our problem. We developed the Chinook Restoration Program in concert with the Department of Fisheries and Oceans. This concept of co-management worked and it worked well.

3.0 BACKGROUND

A firm grasp of the economics of the sport fishery and the inter-relationship with the commercial fishing fleet, the salmon resource and the Canada - U.S. Salmon Interception Treaty is essential to place the co-management program in its proper perspective.

3.1 THE RECREATIONAL FISHERMAN

Who is the recreational fisherman? The profile of the recreational fisherman in British Columbia or for that matter Canada, is very simple. He or she is you or me or any other person that has chosen to grasp a fishing rod and go fishing. This vocation is not restricted to a chosen few. It is important to remember that the constituents of the various board members are all Canadians and tourists. The key to a win for board members is to maintain a continuous twelve month fishery while promoting the opportunity and expectation of success for the entire sport fishing community.

3.2 THE ECONOMICS OF THE RECREATIONAL SPORT FISHERY

The sport fishery does more than just provide a recreational experience to 400,000 anglers. It makes a highly significant contribution to the economy of British Columbia. I would further mention that numerous detailed surveys of boating in B.C. suggest that fishing is the principle activity of the majority of boaters in B.C. Some 60% indicate that fishing is their primary activity. B.C. boaters purchased over 327,000 tidal sport fishing licenses last year and account for nearly 1.8 million angler/days of fishing annually.

To place this in a more global picture, just a few statistics for recreational boating in Canada as a whole. In their pursuit of recreational pleasure, boaters spend approximately 2.5 billion dollars on goods and services. About 20% on boats and equipment and 8% on 400,000,000 litres of fuel which generates over \$100 million in federal sales and fuel tax annually (Council of Boating Organizations, n.d.)

As tourism becomes B.C.'s largest industry in the future, boating will continue to play a major role in the B.C. economy, and fishing will continue to be the principle activity of boaters and tourists.

3.3 RECREATIONAL FISHERMAN: RELATIONSHIP TO THE DEPARTMENT OF FISHERIES AND OCEANS

The key to the success of the marine industry is sport fishing; the key to the success of sport fishing is the dream shared by the angler/boater that he or she may catch a salmon. If this dream is restricted or threatened, the inevitable result is a decline in sport fishing and the marine industry. For example, in 1981 the Department of Fisheries and Oceans

announced that a restriction on sport fishing might be required. Consequently, the marine industry experienced a serious decline, and to this day there are boaters and sport fishermen in B.C. and around North America who still believe sport fishing for salmon in B.C. is illegal. The lack of sensitivity within the Department of Fisheries and Oceans and the lack of comprehension in marketing the sport fishing concept has been a difficult obstacle to overcome. This ignorance or mind set within the Department has been created by years and years of dealing only with the commercial fishing sector.

The political strength of the numbers of recreational fishermen and the growing significance of the recreational and tourist industries in B.C. are slowly eroding the old guard and a new understanding for the recreational fishing community is slowly starting to build.

3.4 SALMON

I want to discuss the Treaty and Co-management of the Chinook, but first a quick review of the salmon family.

The salmon species is comprised of five families. These five families are the Pink, Chum, Sockeye, Coho and Chinook. To confuse matters these are often referred to by local or other names. For example, the Chinook is also called a King, Tyee, Spring or Black Mouth. The Pink, Chum and Sockeye are predominantly commercial fish and are normally harvested by nets. However, both the sport and commercial, hook and line fishermen are becoming more proficient at catching these net species. The two remaining salmon, the Coho and Chinook, are the main sport fish and are also harvested by the West Coast Commercial Trolling fleet. To appreciate the friction between the recreational industry and the commercial harvesting sector, one must understand that not only is the commercial troller and sport fisherman competing for the same fish; but, as the net fleet targets on Sockeye, they invariably catch Chinook as a by-catch.

3.5 SALMON ENHANCEMENT PROGRAM

The Salmon Enhancement Program has been a major success putting more and more salmon into the ocean. This is a wonderful program and is very much a motherhood issue. That is a red herring. The program was a dismal failure as far as the sport fisheries were concerned. The program was successful with Sockeye, Chum and Pinks (the commercial salmon), but the Chinook and Coho did not respond and hence an imbalance in nature was created. The more Sockeye that were caught commercially by net fleets, the more Chinook there were lost as by-catches (Table 1).

3.6 THE CANADA - U.S. SALMON INTERCEPTION TREATY

The salmon migrate north and west into the Pacific for part of their life cycle. The mature adults returning home to spawn hit land fall in southern Alaska and northern B.C. If we could not reach an agreement with the United States to harvest these fish cooperatively, the race by all commercial harvesters to move north and westward and follow the migrating populations of salmon would decimate the stocks.

The salmon resource was doomed unless a treaty committed to controlling the north coast fishery and to placing salmon on the spawning grounds was created. On signing the treaty, Canada gave away its right to allocate domestic stocks within the boundaries of B.C. But most significant blunder was in the Chinook annex. The seine fleets were recognized as harvesters of Chinook but this harvest was a by-catch or accidental and therefore was not counted in the net fleet's catch but was part of the overall number for the

Table 1. Projected and Actual Production From Pre-SEP and Phase I Projects by Catch Year and Species.

Year	<u>Projected Production</u>					
	Sockeye	Chum	Pink	Coho	Chinook	Total
	(thousands of pieces)					
1981	1,734	289	70	378	204	2,675
1982	1,160	394	160	527	242	2,483
1983	1,531	642	215	542	256	3,186
1984	1,717	1,145	73	575	271	3,781
1985	1,895	1,618	209	795	309	4,826
1986	1,972	1,890	110	1,358	368	5,698
1987	1,497	2,211	210	1,178	424	5,520
1988	1,814	2,143	188	1,042	481	5,668
1989	1,997	2,145	205	1,052	548	5,947
1990	1,708	2,164	188	1,042	612	5,714

Year	<u>Actual Production</u>					
	Sockeye	Chum	Pink	Coho	Chinook	Total
	(thousands of pieces)					
1981	2,726	90	67	364	143	3,392
1982	2,292	384	55	362	212	3,305
1983	1,570	360	113	446	208	2,696
1984	1,384	837	26	416	216	2,878
1985	2,836	3,240	85	571	145	6,878

coast. In other words, the net fleets could catch the Chinook and not impact on their totals, but the seine catch affects the total of all other users.

The treaty was therefore, in base terms, a "net treaty". This is another topic that I could dwell on for a few hours but suffice to say, in a nutshell, the only Chinook fishery that has gone up this year in the catch of Chinook is the net fishery. All other fisheries have gone down in their catch of chinook.

Canada has had an agreement to share the Fraser River Sockeye with the United States. This agreement arose because the U.S. funded the clearing of the Hell's Gate area of the river many years ago. The treaty provided Canada in excess of 1.5 million sockeye from the Fraser River system, and remember, Sockeye are predominantly a net species.

The bottom line for the 1985 season, based on the Treaty, was that the commercial trollers and the sport fishermen had a total bag of 275,000 Chinook to share from the Gulf of Georgia. The commercial trollers in the Gulf are boats approximately 30 feet in length. These fishermen troll four to eight lines with a series of lures off these. The Gulf trollers form a moderate sized organization of approximately 300 individuals, and many are retired or part time fishermen. It was recommended that the trollers be given a portion of the 1.5 million Sockeye than the Treaty provided Canada to make up the shortfall in Chinook. (A sport boat is not very successful on Sockeye but a troller can modify his lines and achieve good results).

To place things in financial perspective, this year the Adams River run of Sockeye are returning. This run returns on a four year cycle. One per cent of the total allowable catch of this run alone translates into approximately \$1 million of landed value.

I stated earlier the process of co-management evolved out of confrontation. The International Treaty was a reality, the Gulf Chinook allocation was established at 275,000 fish. The troops were marching in the streets. The then Minister of Fisheries, the Honourable John Fraser, came to the Sport Fishing Advisory Board and asked for a recommendation on how to halt this rebellion.

4.0 CHINOOK RESTORATION PROGRAM

We said we had a plan that would satisfy the spirit of the Treaty but would not impact on the opportunity and expectation of the recreational fishing community. John Fraser had faith and foresight and agreed to back the "Chinook Restoration Program".

The thrust of this management plan is focused upon the escapement of salmon to the spawning grounds, rather than upon such limiting factors as total allowable catch or the simple allocation amongst users. We would work toward a goal of 225,000 Chinook, leaving 50,000 Chinook for the trollers.

4.1 TOTAL ALLOWABLE CATCH

I must digress for a moment and discuss total allowable catch. This concept is totally unacceptable to the recreational fishing community. Can you imagine trying to plan camps, fly in resorts and the like with the threat of the Department of Fisheries and Oceans suddenly announcing a total closure? I might add that on the West Coast of the United States a town called Westport had a \$45 million charter industry. This industry dropped to under \$7 million overnight because it was limited by total allowable catch.

5.0 CO-MANAGEMENT OF THE RECREATIONAL CHINOOK FISHERY

5.1 THE PROGRAM

The co-management program called for a salmon management committee co-chaired by members of the Sport Fishing Advisory Board and the Department of Fisheries and Oceans. These two gentlemen, Mr. Bob Wright and Mr. Dennis Brock, coordinated nine Sport Fishing Advisory Board members and nine Department of Fisheries and Oceans biologists. The goal of this group was to plot the returning runs of Chinook and design a series of conservation areas or "spot" closures. The concept was to apply these sophisticated spot closures to provide a window of opportunity for the Chinook salmon escapement and achieve maximum conservation benefits. To achieve these goals:

1. The spot closures were to be designed with consideration of the social and economic impacts on adjacent centres of sport fishing activity.
2. The duration and size of the spot closures were to be designed to provide maximum conservation benefits with minimal disruption to the fishing opportunity.
3. The information provided to assist in the design of these "windows of opportunity" were to be based on sound biological practices which would include such concerns as the age-class, stock-size and stock-source of the Chinooks to be conserved.
4. In order to assess the consideration in point 3, or other areas of concern, there were to be provision for ready access to appropriate technical resources by the salmon co-management committee.
5. Absolutely paramount in such a procedure was concise, prompt and thorough public notification of the times and definitions of closures.

5.2 CREEL SURVEY

The co-management committee went to work designing "spot closures" that were small enough to do the job. This group relied on the creel survey information that is contracted by the Department of Fisheries and Oceans on the Strait of Georgia recreational fishery. The statistics are gained by one of the most sophisticated creel surveys in the world. The catches in 1985 were based on statistics gained through 64 overflights and 35,000 interviews. For comparative purposes as of 31 October 1984 there were 53 overflights and 28,000 interviews (Shardlow and Hoyt 1985). This survey has been in existence since 1981 and has consistent catch and effort data (Table 2).

5.3 CHINOOK "PASSED ON"

Thirty-two new spot closures were developed to provide "windows of opportunity" for the Chinook salmon to pass on toward the river. The biologists had decreed that the recreational fishing community had a responsibility to place an extra 4,000 Chinook on the spawning grounds. It was estimated that these spot closures would pass on 70,000 pieces. To augment that saving, the daily limit was reduced from four salmon per day to salmon only two of which may be Chinook and the annual bag limit was reduced from 30 to 12. It was estimated this would pass on another 55,000 making a total of 125,000 pieces which in fact became 134,600 (Sport Fishing Advisory Board 1985). I must emphasize that the

Table 2. Creel Survey Statistics For The Periods From January 1 to December 31, 1984 and 1985 (Strait of Georgia)

	Statistical Area										
	13	14	15	16	17	18	19A	19B	28	29	TOTAL
Effort	142774	105409	10549	81352	86445	42404	37478	66967	39961	37751	651090
Coho	152065	106498	7757	51982	57481	4586	3081	41826	7130	11184	443590
Chinook	93242	55178	6240	49985	52731	24654	24318	24354	16555	22188	369445
Effort	132934	118224	12095	87292	69868	32448	33244	81824	34415	26170	628514
Coho	258627	215116	16329	79650	95294	8071	2752	25304	12560	14494	728197
Chinook	51662	44245	5436	26463	31480	11992	17631	27843	9513	8573	234838

plan recognized that some of the fish saved in the bag reduction or in a spot closure would be subject to a recapture in another area of the Strait of Georgia.

6.0 THE CO-MANAGEMENT PLAN - INTRODUCED

The basis of the plan was to place an extra 4,000 pieces on the spawning grounds without impacting on the opportunity to angle. If 10% of the fish passed on reached the spawning beds, then we would have a bottom line of 13,400 fish.

So this was the plan. How did it work?

The Department of Fisheries and Oceans biologists and the Sport Fishing Advisory Board members worked weekends and nights and a common thread of respect and comraderie was developed by the team.

6.1 SYMBOL OF THE CHINOOK RESTORATION PROGRAM

The Chinook Restoration Program was identified by a symbol (Figure 1). When the Sport Fishing Advisory Board recommended spot closures to the Minister as a way to conserve the wild Chinook, it was clear that a symbol for the program was needed. The board looked to one of our own members to create the design.

The artist who created the graphic is a man as unique as the design itself: Jim Gilbert is a non-native who learned Northwest Coast Native styles and techniques from his father, Harry, who painted and carved until his death in 1967.

What Jim stylistically illustrates in Chinook Restoration Program symbol is a circle (head to tail) of a pair of Chinook in darkened spawning colouration, with eggs and sperm coming together in the water of a spawning nest. The salmon are cradled in human, profiled, upturned hands with a salmon copper (signifying wealth) placed between the hands and waves below (representing the total water environment). This symbol was carried with a series of newspaper advertisements announcing the closures.

6.2 BILL C-32

The introduction of the restoration program was stalled. The Minister of Fisheries and Oceans did not have the power to allocate resources for reasons other than those of conservation. John Fraser required a short, one page Bill to be passed by the House of Commons to permit the various allocations as defined in both the Treaty and the Chinook Restoration Program. This Bill, Bill C-32, was delayed by the opposition and finally passed in early June of 1985. It allowed the Restoration Program to start on 5 June 1985.

The initial announcements and advertisements were, as I advised the Minister of Fisheries and Oceans, an "unmitigated disaster". The passing of Bill C-32 should have been anticipated and a preplanned, well thought out program instituted.

Instead, however, the media received a typical Ottawa press release with partial information and some mis-information. Also the extra phones installed by the Department of Fisheries and Oceans to answer questions broke down. A group of industrious individuals had a quick conference and began a positive press campaign calling all radio, television stations and newspapers to turn the situation around. This was accomplished in less than 12 hours.



Figure 1. The Chinook Restoration Program symbol, designed by Jim Gilbert.

6.3 ENFORCEMENT

The spot closures were by and large recognized and respected by all fishermen. The infractions amounted to three; remembering there are in excess of 400,000 sport fishermen, this was a major accomplishment (Salmon Management Committee 1985).

6.4 HARVEST UNDER THE PROGRAM

The target was to harvest 225,000 piece of Chinook without impacting on the sport effort. The creel survey, which works to a confidence level of $\pm 5\%$, came in at 234,838 pieces (Strait of Georgia Creel Survey Results 1985). If we deduct 5%, the number is 223,096 which is virtually bang on. If the program had been initiated on the original time frame, the catch would have been 221,000 pieces $\pm 5\%$. The sport effort season in days dropped only 10%. The program was a major success with a 37% reduction in catch, but only a reduction of 10% in fishing days (Table 3).

6.5 SPAWNING ESCAPEMENT

So the catch was on target, but what about the spawning population? Once again the program showed success. The escapement to the Fraser River system increased from 79,000 Chinook in 1984 to 140,000 in 1985 (Salmon Management Committee Meeting 1985) (Table 4). Salmon in most of the river systems increased, however fish in three rivers on Vancouver Island did experience difficulties. The timing of the salmon runs coincides with the Johnstone Strait net fishery. This is the net fishery that was up in it's by-catch of Chinook by 108%. It was also suggested that some band rivalry resulted in midnight poaching. The bottom line is this, coast wide escapements increased from 378,900 in 1984 to 446,400 in 1985 (Pacific Salmon Commission 1985).

7.0 CONCLUSION

This restoration program started with many skeptics and still has a long way to go in converting the "die hard" Department of Fisheries and Oceans commercially oriented individuals.

However, the program worked and it worked well. The program reduced catch without impacting significantly on opportunity and expectation. In summary:

1. The creel survey indicated a dramatic drop in catch immediately after the Chinook Restoration Program was instituted. This program resulted in a 37% reduction in sport catch.
2. Only three infractions were recorded out of an excess of 628,000 days of sport fishing effort.
3. Recreational fishing effort was down by only 10%.
4. The by-catch in the seine fleet of Chinook increased dramatically. The catches in Johnstone Strait were up by approximately 108% (Salmon Management Committee 1986).
5. General spawning escapement was up.

Table 3. Strait of Georgia Monthly Sport Fishing Chinook Catch. (Source: Strait of Georgia Creek Survey Results, 1 January, 1985 to 31 December, 1985. Table 2)

Month	1981	1982	1983	1984	1985
January	17700	12800	4029	4406	2918
February	17700	12900	4029	4407	2918
March	10500	6500	9394	5365	2901
April	7300	7300	3845	17810	8185
May	32300	12855	6695	35381	44809
June	34100	17183	27659	96795	56492
July	40000	29799	37248	95904	36208
August	37500	27122	37438	58166	38144
September	28300	20301	37637	29673	21275
October	11400	4813	20474	6717	3553
November	8250	6160	4993	7413	8218
Deceber	<u>8250</u>	<u>6160</u>	<u>4993</u>	<u>7413</u>	<u>8217</u>
TOTAL	253300	163793	198433	369450	234838

Table 4. Escapement of Chinook to B.C. Streams (Summarized from DFO Canadian Agency Report March 7, 1986).

	Escapement Goal	Annual Escapement			
		1985	1984	1983	1982
Transboundary	72.5	21.9	21.5	14.0	37.0
North Coast	72.3	63.3	50.8	24.7	24.6
Central Coast	45.2	30.2	23.2	21.2	23.3
Georgia Strait	69.3	34.7	34.2	32.7	35.0
Fraser River	270.9	197.1	149.8	59.4*	65.0*
W. Coast Vancouver Island	<u>124.3</u>	<u>99.2</u>	<u>99.4</u>	<u>39.9</u>	<u>65.9</u>
PRELIMINARY TOTALS	654.5	446.4	378.9	191.9	250.8

* Includes visual counts in Harrison River prior to monitoring program. Visual count underestimated spawners by approximately one fifth.

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COOPERATIVE MANAGEMENT OF POLAR BEARS ON NORTHEAST BAFFIN ISLAND

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ABSTRACT: *Wildlife Management in the Northwest Territories is viewed by both user groups and regulatory agencies as a cooperative process. The Department of Renewable Resources approached the communities of Broughton Island and Clyde River with evidence that their annual quotas of 22 and 45 polar bears, respectively represented an overharvest. Polar bears in this area appear to occur at low densities and have a low age of first reproduction. A population analysis was discussed with Inuit hunters from these two communities during a series of meetings. As a result of this dialogue, a Letter of Understanding was signed which reduced the quotas by 42 bears. This agreement is viewed by many as a milestone in the cooperative management of renewable resources in northern Canada.*

1.0 INTRODUCTION

In 1973, the Governments' of Canada, Denmark, Norway, the Union of Soviet Socialist Republics, and the United States of America signed an Agreement to conserve polar bear populations and their habitats throughout the Arctic. This Treaty remains the only document to which all five Arctic nations are signatory.

The terms of the Treaty allow for a subsistence harvest of polar bears by Native people. In Canada, this has been interpreted as allowing polar bears to be taken primarily for the cash value of their pelts by indigenous people with a tradition of hunting polar bears. The revenue generated from the sale of hides is a significant contribution to the economy of these remote villages and the hunt is an important part of their cultural heritage. The Canadian harvest is closely regulated by a quota system to prevent populations from being over-exploited.

Polar bears are also harvested in Greenland (Denmark), Alaska (USA), and in the Soviet Union. The Alaskan and Greenland Inuit are not restricted in the number of bears they take. The details of the recent Soviet harvest are not yet known. Only in Svalbard are polar bears completely protected from harvest.

Until 1985, the Treaty had not been tested. In 1985, data collected by our research programs suggested that the population of polar bears in the northeast Baffin area had been reduced by overharvest. The quotas set for that region appeared to be too high. It became necessary to reduce the kill of polar bears in that area to allow population recovery. This reduction was accomplished by a negotiated agreement between community Hunters' and Trappers' Associations and the Government of the Northwest Territories. This paper briefly outlines the evidence suggesting that a change in management was required, and describes in detail the cooperative management program for polar bears in the northeast Baffin area.

2.0 BACKGROUND

Polar bear quotas in the Northwest Territories are primarily based on estimates of the level of harvest which subpopulations can withstand. The polar bear quota for the NWT is 617 bears per year. Inuit have a tremendous interest in harvesting polar bears and there is periodic pressure to increase quotas.

Polar bear quotas have been increased from time to time in response to new information about the health and productivity of the resource and in response to demand from the hunting public. There has been some criticism at the National and International level that, if a conservation concern arises, political circumstances are such that reductions in quotas are not possible. The example which I will discuss here demonstrates that reductions are possible and provides reinforcement for the general principle that resource management should involve those who will be most affected by the outcome.

3.0 POPULATION ANALYSIS

We have estimated the northeast Baffin polar bear population at between 300 and 600 bears. With the observed rates of natality and natural mortality, the annual sustainable harvest would be between 10 and 17 bears assuming that the sex and age characteristics of the harvest are similar to the current situation. About 67 bears were being taken each year. The sex and age characteristics of bears in the harvest suggested overharvest. Many females were observed to breed at 4 years of age rather than the more typical 5 years. This reduction in age of first reproduction may have been due to relaxation of density dependent depression of reproduction.

A computer simulation model was employed to examine various management options. When the harvest was reduced to 31 bears per year, the population declined precipitously (Figure 1). Recovery rates with no harvest were about 3% per year (Figure 2). Populations of 450 and 300 declined with an annual harvest of 15 (Figure 3), and increased slowly at a harvest rate of 10 per year (Figure 4). The minimum population (300) declined with harvests of 15 and 10 (Figures 3 and 4).

The final year of study suggested that the population being harvested was somewhat larger than 450. The hunters also felt that there was exchange with less heavily hunted populations to the north and within the offshore Baffin Bay area. Given the potential for immigration, an annual harvest of 25 bears per year was considered reasonable. Even if the potential for immigration was overestimated, serious damage to the local polar bear stocks would probably not occur in the given (six year) time frame. In addition, the hunters agreed to avoid taking females and concentrate on the non-reproducing animals. Reallocation of the harvest to non-reproductive animals can be as effective as reducing the number taken in mitigating a given harvest (Figure 5).

4.0 PROCESS OF NEGOTIATION OF THE AGREEMENT

The process of negotiating the Agreement began with the field research on the polar bears of northeast Baffin Island. Wildlife research in the Northwest Territories is permitted under the authority of a Wildlife Research Permit; a requirement of our Wildlife Act. Biologists are required to consult with communities as part of the process of applying for a permit. As well, our Department promotes and encourages the participation of resource users in field surveys. The field research began in the spring of 1981 and community meetings were held at that time to explain the purpose of the work. Representatives of the

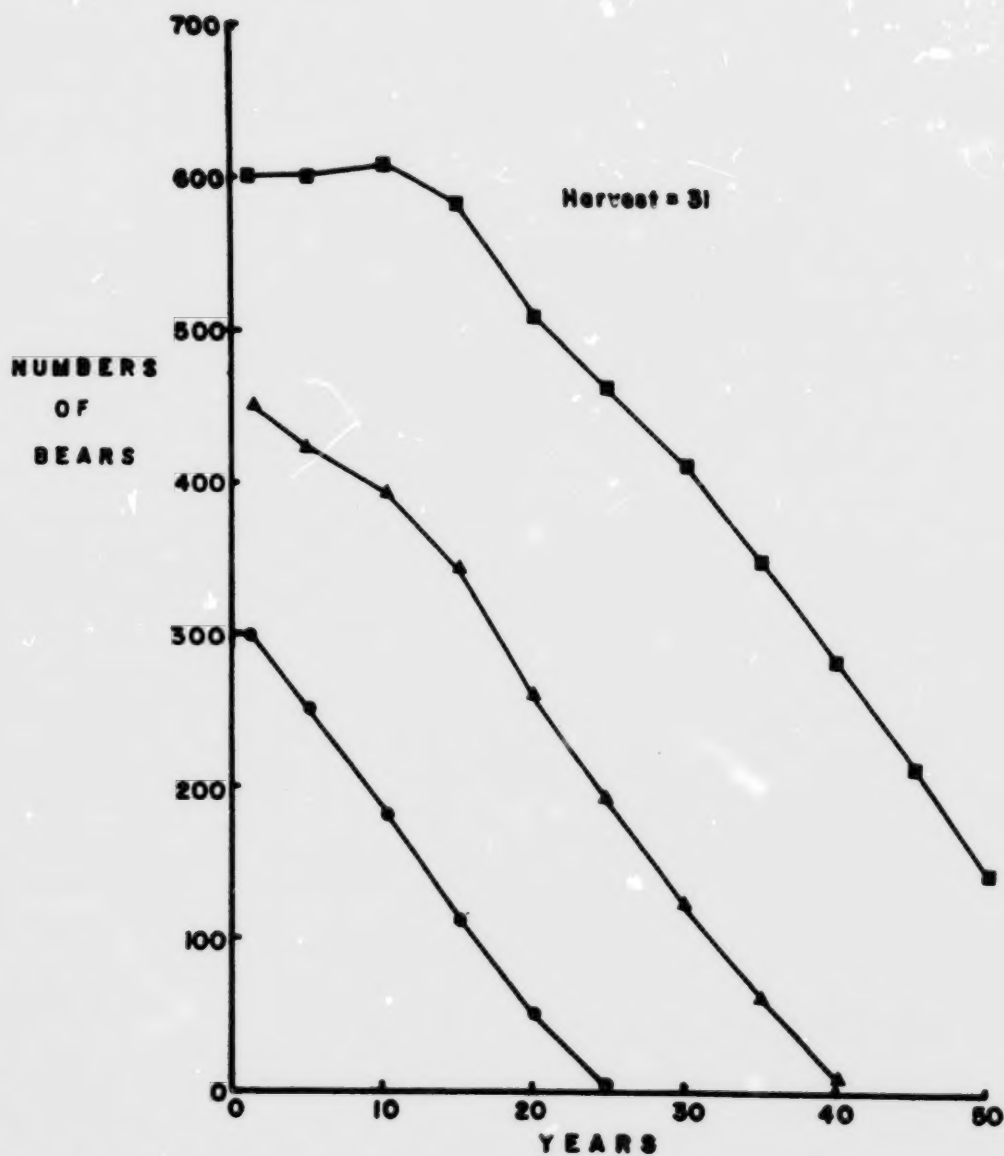


Figure 1. Predicted growth of a polar bear population with hunter kill of 31 bears beginning from 3 different population estimates (300, 450, and 600).

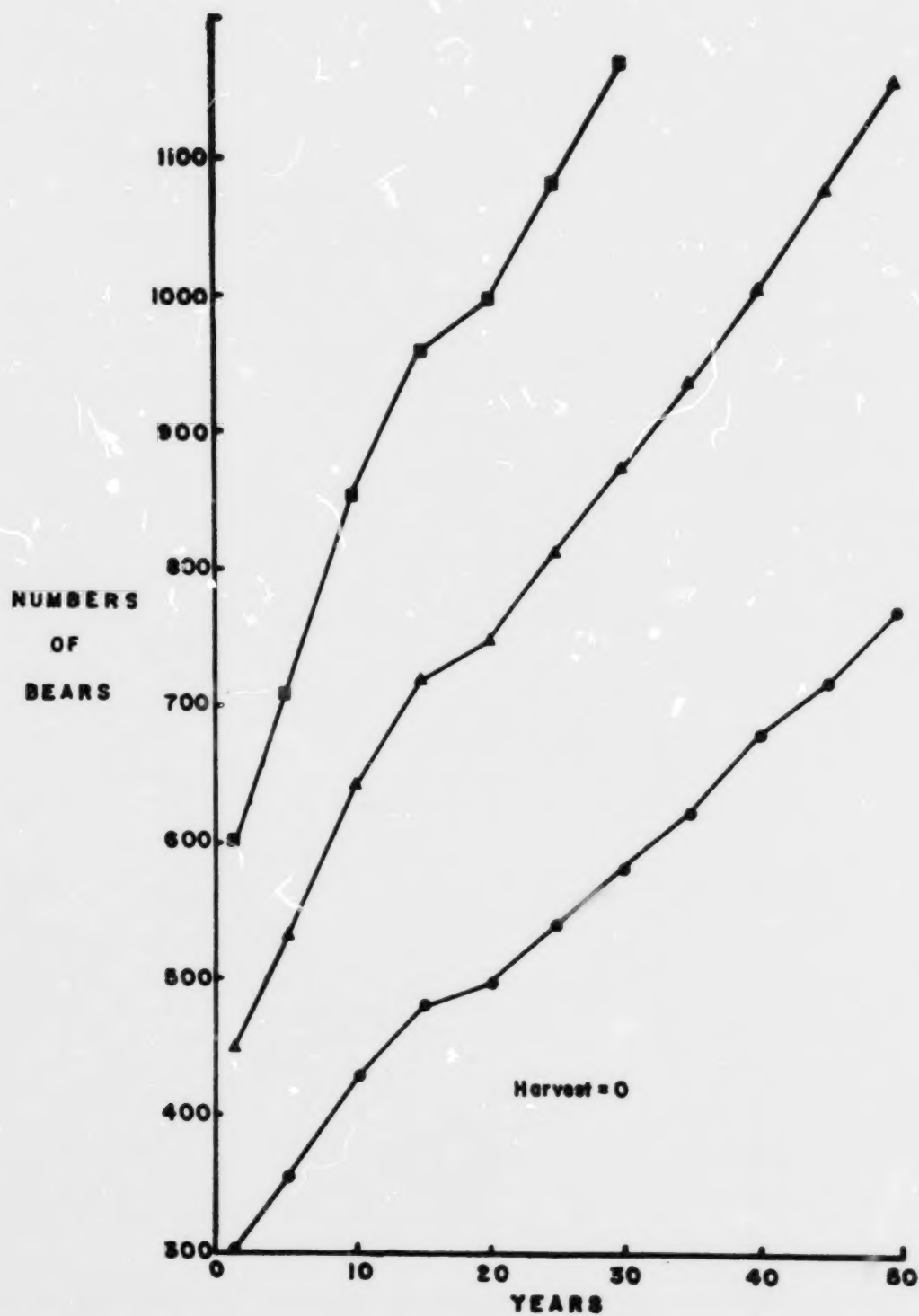


Figure 2. Predicted growth of a polar bear population with no hunter kill beginning from 3 different population estimates (300, 450, and 600).

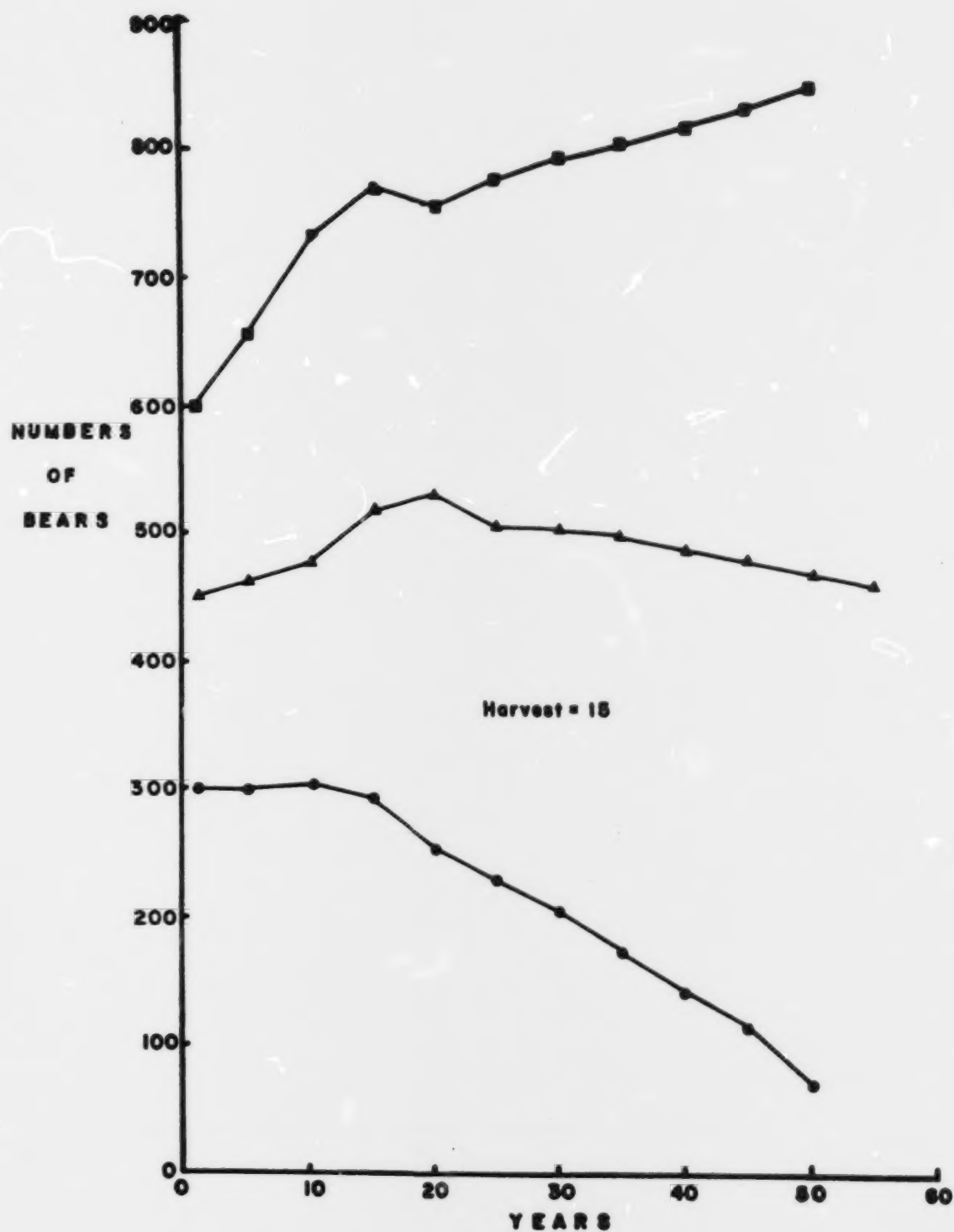


Figure 3. Predicted growth of a polar bear population with hunter kill of 15 bears beginning from 3 different population estimates (300, 450, and 600).

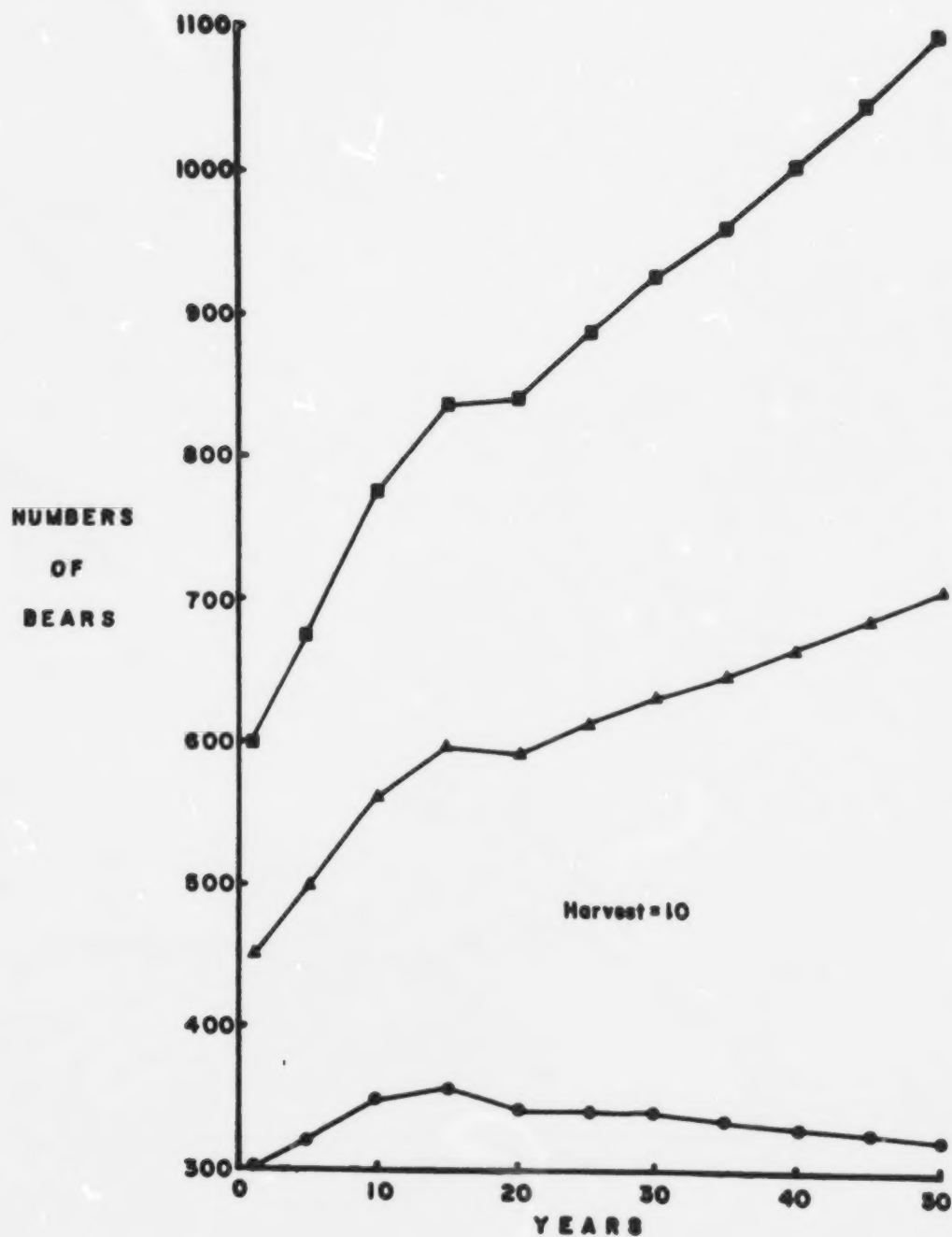


Figure 4. Predicted growth of a polar bear population with hunter kill of 10 bears beginning from 3 different population estimates (300, 450, and 600).

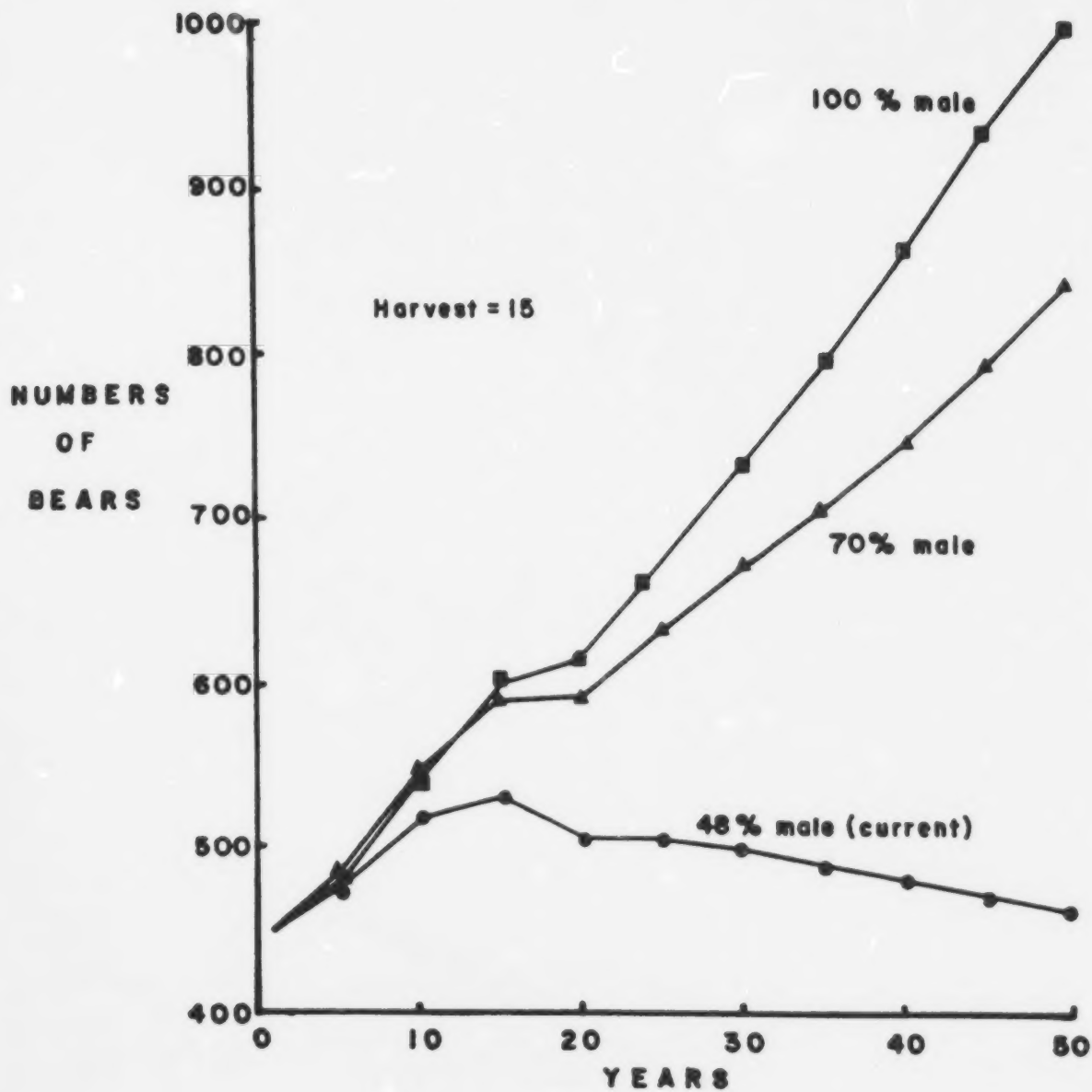


Figure 5. Predicted growth of a polar bear population with hunter kill of 15 bears of which 48%, 70%, and 100% are males.

communities participated in the field work and community meetings were held prior to the beginning of field work each year.

After 4 years of data were analyzed, a community meeting was held and the Polar Bear Biologist presented information to the communities which suggested the possibility of overharvest. After several days of meetings, which involved the translation of the Biologist's statements into Inuktitut, agreement was reached that the research would continue for one more year to confirm the results. This necessitated a special submission to Cabinet for additional research funds.

The conservation of polar bears in the NWT is an expensive endeavour. The cost of the five years field research on Northeast Baffin Island exceeded 1 million dollars in manpower and operational cost. The cost of community consultation exceeded 15 thousand dollars.

General indications of overharvest were, in fact, confirmed and a series of community meetings to discuss the problem were held in July of 1984 and February, March and October of 1985. The evolution of the Agreement began with the following sequence:

1. Agreement that there was a problem.
2. Agreement that the Inuit had more to lose than anyone else, if there was overharvest and a prolonged recovery.
3. Agreement that the Department of Renewable Resources and the Inuit would work together to identify a solution to the problem.

The eventual successful negotiation of the Agreement was also due in part to several other factors:

1. Independent evidence from the hunters' own experience which corroborated the possibility of overharvest.
2. Repetition of meetings with adequate time between meetings for acceptance of the nature of the problem and proposed solutions.
3. Negotiation with the hunters by the individual who had the benefit of direct experience in the research, the Polar Bear Biologist.
4. Trust by the hunters in the Biologist. This grew throughout the process and was based on several years of dialogue about polar bears and on the Biologist's natural attribute of being forthright and honest.
5. Ongoing contact between the wildlife officer and the HTA. This kept the issue "alive" and also ensured quick responses to questions from hunters.

5.0 NATURE OF THE AGREEMENT

The Agreement between our Government and the people of Broughton Island and Clyde River is in the form of a Letter of Understanding. The hunters of communities in the Northwest Territories are represented by organizations which are supported and funded by our Department and which are known as Hunters' and Trappers' Associations or HTA's.

The Letter of Understanding was signed in October of 1985 by the presidents of the two HTA's, and the then Minister of Renewable Resources for the Government of the Northwest Territories, Ms. Nellie Cournoyea.

The Agreement has the following elements:

1. Nothing in the Agreement will be prejudicial to the settlement of Land Claims.
2. The communities of Broughton Island and Clyde River will reduce their take of polar bears from 67 bears to 25 bears annually.
3. The hunters will avoid shooting breeding females and family groups.
4. Any bears killed in defence of life or property will be deducted from the regular quota, except in exceptional circumstances.
5. The abundance, distribution and productivity of polar bears will be reviewed in 1992, six years and six months from the date of signing of the Agreement.
6. The Agreement does not in any way impact either the mandate of the Minister nor the normal operations of the HTA's.

As well, the Department is exploring ways of enhancing other resource harvesting opportunities for these two communities. For the current year, this will take the form of a contribution to a 12 metre boat which can be used by the community for other types of renewable resource harvesting.

Special effort has been devoted to deterring polar bears from the vicinity of these two communities and from a nearby outpost camp. As part of the application of technology from our long term bear deterrent and detection program we supplied wildlife officers and HTA members with 38 mm riot guns, rubber bullets and the necessary training. In the first year of the agreement 35 control actions were undertaken. As well, HTA members have been hired to assist with nightly patrols around the perimeter of the communities and to construct two bear traps.

6.0 CONCLUSION

The agreement reached with the Inuit of Baffin Island will remain in effect for another six years. Time will tell whether the steps taken have resulted in recovery of the polar bear population; all of our evidence suggests that the population will recover.

I think that the agreement reflects very well on the sense of stewardship which the hunters of Broughton Island and Clyde River have for the wildlife resources which occur in their area. The agreement provides a useful model for resource management at a time when political development is dynamic.

7.0 ACKNOWLEDGEMENTS

Field research was conducted by Dr. R. E. Schweinsburg, J. Lee and G. Stenhouse with assistance from Theo Ikummaq and Joe Tigullaraq. The Government was represented in negotiations by R. Wooley, J. Bailey, R. Schweinsburg and J. Tigullaraq. M. Taylor reviewed the manuscript.

SESSION IV:
PREPARING FOR THE FUTURE

ARCTIC COLLEGE RENEWABLE RESOURCES TECHNOLOGY PROGRAM

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ABSTRACT: *The Arctic College Renewable Resources Technology Program is a unique northern post secondary program leading to a certified diploma of technology. In six full two year cycles, 46 students have completed the program to graduate. Among these graduates, 63% have been northern aboriginal people. Graduates of the program have met the demand for an indigenous northern work force with general technical training in the field of renewable resources.*

1.0 PHILOSOPHY OF THE ARCTIC COLLEGE RENEWABLE RESOURCES TECHNOLOGY PROGRAM

The Renewable Resources Technology Program is a two year, post-secondary program leading to a certified diploma of technology. Field camps, academic and technical courses are directed toward producing general technical graduates in the fields of Wildlife, Fisheries, Forestry, Water Resources, Parks and Land Management. Unique features of the program include:

1. Northern Content: The program is designed to serve the needs of the people of the North. Northern examples, specimens, situations and experience are used throughout the program.
2. Outdoor Orientation: The program is laboratory and field oriented. A minimum of 40% of course content in any major study area is devoted to practical laboratory and field exercises.
3. Employment Directed: The program is designed to develop the technical skills required by employers. An active advisory board comprised of representatives from user agencies provides continuing direction, evaluation and support.
4. Block Timetabling: Courses are scheduled in blocks of time ranging from three to twenty days. Generally two courses are offered each day to each class, one in the morning and one in the afternoon. This system provides for flexibility and allows access to a variety of expert contract instructors from government, industry and universities.

2.0 ADMISSION REQUIREMENTS FOR R. R. T. P. STUDENTS

The program can accept a maximum of 20 students annually into the first semester. Students require:

1. A demonstrated interest in the field of renewable resource technology.

2. A high school graduation certificate with satisfactory performance in English, Mathematics and Biology.
3. Good health as demonstrated by a recent medical examination certificate.
4. A valid firearms acquisition certificate (F.A.C.).

The following criteria are considered in making the final selection of students:

1. Academic Record.
2. Sponsorship by a potential employer.
3. Proven work experience.
4. Excellent supporting references.

3.0 CURRICULUM

The Renewable Resource Technology Program curriculum was originally designed by Dr. John Kelsall in 1976 to provide a general program in renewable resource technology for northern people in a northern setting. Selkirk College, Castlegar, British Columbia, was contracted to establish the program and offer the first three years of instruction based at the Fort Smith, N.W.T. campus. In 1980, the program was taken over by the government of the N.W.T. and incorporated into the Adult Vocational Training Centre (AVTC), which later became Thebacha College and is now known as the Thebacha Campus of Arctic College. Since its birth the program has been changed and modified to take greater advantage of available field opportunities and changing requirements of employing agencies. Table 1 is a list of courses offered during the current academic year.

4.0 R. R. T. P. STUDENTS

Since the enrollment of the first class in 1978, the R.R.T.P. has completed six full two year cycles. During that time, 95 students enrolled in the program and 46 students graduated (48.5% overall success rate). Students in the R.R.T.P. have come from a tremendous variety of ethnic backgrounds and geographical areas reflecting the variety and expanse of the north. Students originate from three major ethnic groups.

1. Indian and Metis

Indian and Metis students are mainly members of the Dene tribes and their descendants from the Mackenzie Valley and Great Slave Lake area of the western N.W.T. Indian students from several tribes in the Yukon are also included in this category. A total of 47 Indian and Metis students have enrolled in the R.R.T.P. and 21 have graduated (success rate = 44.6%).

2. Inuit and Inuvialuit

Inuit and Inuvialuit students have come from the Inuvik, Kitikmeot, Keewatin and Baffin regions of the N.W.T. A total of 21 Inuit and Inuvialuit students entered the R.R.T.P. and eight (8) have graduated (success rate = 40%).

Table 1. Renewable Resources Technology Program Curriculum 1985-86.

Course Name		Contact Time	
<u>Year I</u>			
150	Communications I	96	hrs.
151	Communications II	72	hrs.
152	Drafting & Mapping	70	hrs.
154	Forest & Range Botany	80	hrs.
155	Winter Camp	2	wks.
156	Fire Science I	60	hrs.
157	Fire Science II	64	hrs.
158	Geology & Soils	60	hrs.
160	First Aid & Survival	45.5	hrs.
162	Mathematics	114	hrs.
164	Photogram & Photo Interpretation	70	hrs.
166	Wildlife Biology	83	hrs.
168	Forest Mensuration	35	hrs.
170	Ecology	70	hrs.
172	Introduction to Parks	80	hrs.
174	Resource Economics & Geo.	35	hrs.
180	Introductory Field Camp	4	wks.
182	Arctic Marine Camp	3	wks.
184	Practicum	4	wks.
<u>Year II</u>			
250	Wildlife Techniques	90	hrs.
251	Wildlife Management	80	hrs.
252	Water Resources Management	84	hrs.
254	Parks Design & Management	40	hrs.
256	Surveying	70	hrs.
259	Law Enforcement	72	hrs.
260	Firearms	17.5	hrs.
261	Photography	37.5	hrs.
262	Marine Fisheries	58	hrs.
263	Biometrics	49	hrs.
264	Administration & Supervision	55	hrs.
265	Combined Field Trip	2	wks.
266	Freshwater Fisheries	59.5	hrs.
267	Typing	60	hrs.
268	General Forestry	48	hrs.
270	Anthropology	59.5	hrs.
272	Renewable Energy	35	hrs.
274	Oil Spill Response	22.5	hrs.
276	Small Engines	60	hrs.
278	Environment Policy & Planning	76	hrs.
280	Technical Project	15	hrs.

TOTAL= 2123 hours in classroom and laboratory + 15 weeks of field schools.

3. Non-Native Northern Residents

Non-native students have come from all parts of the N.W.T. To date all non-native students accepted into the program have been long term (usually more than 10 years) northern residents. A total of 28 non-native northern residents have entered the R.R.T.P. and 17 have graduated (success rate = 60.7%).

Enrollment and success rates of the various ethnic groups are shown in Table 2.

5.0 EMPLOYMENT RECORD OF R. R. T. P. GRADUATES

Students graduating between 1980-1985 have been very successful at finding employment (Table 3). Of 46 graduates, 42 have accepted employment in the field of renewable resources (91.3% employment rate). The Government of the N.W.T. Department of Renewable Resources has hired a total of 26 R.R.T.P. graduates. Most graduates (22) have accepted positions as Renewable Resources Officers located in all parts of the N.W.T. R.R.T.P. students now occupy more than 34% (19 to 55) of the officer positions in the Department of Renewable Resources.

Secondary employers have been various Federal government agencies including Indian and Northern Affairs Canada, Department of Environment and Department of Fisheries and Oceans. One graduate is employed by the Dene Nation political organization. Table 3 is a summary of the employment opportunities accepted by R.R.T.P. graduates between 1980-1985.

R.R.T.P. students who left the program before graduating, have also been successful in finding northern employment with industry, Native organizations and government.

Affirmative action and northern preference hiring policies of the Government of the N.W.T. has resulted in a high demand for R.R.T.P. students. This is reflected in the large number of graduates employed as Renewable Resource Officers.

6.0 DEVELOPMENTS ON THE HORIZON

Among the central goals of the R.R.T.P. has been the establishment of a stable indigenous work force trained in renewable resource management. This goal has been largely achieved. As of 1 January 1986, 36 to 42 (86%) graduates employed in a renewable resource position were still on the job. Several graduates have left their positions to pursue further education, a few have accepted employment in other fields.

In October 1986, Indian and Northern Affairs Canada will be turning over responsibility for forest protection to the Government of the N.W.T. This transfer will more than double the number of positions in the Department of Renewable Resources. If the Government of the N.W.T. hiring policies continue and normal rates of attrition and transfer (currently about 5%/year) can be extrapolated, then the demand for Renewable Resources Technology Program graduates should remain strong.

Table 2. Performance of Students From Three Ethnic Groups Who Enrolled in R.R.T.P. Between 1978-83.

Ethnic Origin	# Students Enrolled	# Students Graduated	% Success	% Graduates
Indian & Metis	7	21	44.6	46
Inuit & Inuvialuit	20	8	40	17
Non-Native Northern Res.	28	17	60.7	37
TOTAL	95	46	48.4	100

Table 3. Employment Record of R.R.T.P. Graduates 1980-85.

Description	Hired 1 Jan. 1986	Currently Employed
<u>Territorial Government</u>		
A. Department of Renewable Resources		
Renewable Resource Officer	22	19
Renewable Resource Tech. (perm.)	2	2
Renewable Resource Tech. (casual)	2	2
	26	23
<u>Federal Government</u>		
A. Department of Indian & Northern Affairs		
Northern Affairs Program		
Assistant Resource Mgmt Officer	4	4
Seasonal Rangers	1	1
Trainees	2	1
	7	6
B. Department of Environment		
Water Survey	1	0
Environment Protection Service	1	1
Parks Canada	3	2
	5	3
C. Department of Fisheries & Oceans	3	3
<u>Other</u>		
Dene Nation	1	1
% of Graduates	42	36

FORT CHIPEWYAN AND RESOURCES OF THE PEACE-ATHABASCA DELTA

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ABSTRACT: *A general description is presented of the location and physical nature of the Peace-Athabasca Delta, in relation to the major river basins which affect its hydrologic regime and that of Lake Athabasca. A brief review is given of the changes which have occurred in the Peace-Athabasca Delta in the last two decades, following closure of the Bennett Dam in British Columbia, which has resulted in low spring and summer flows on the Peace River, and lower than normal peak summer water levels in Lake Athabasca and associated marshlands in the Peace-Athabasca Delta.*

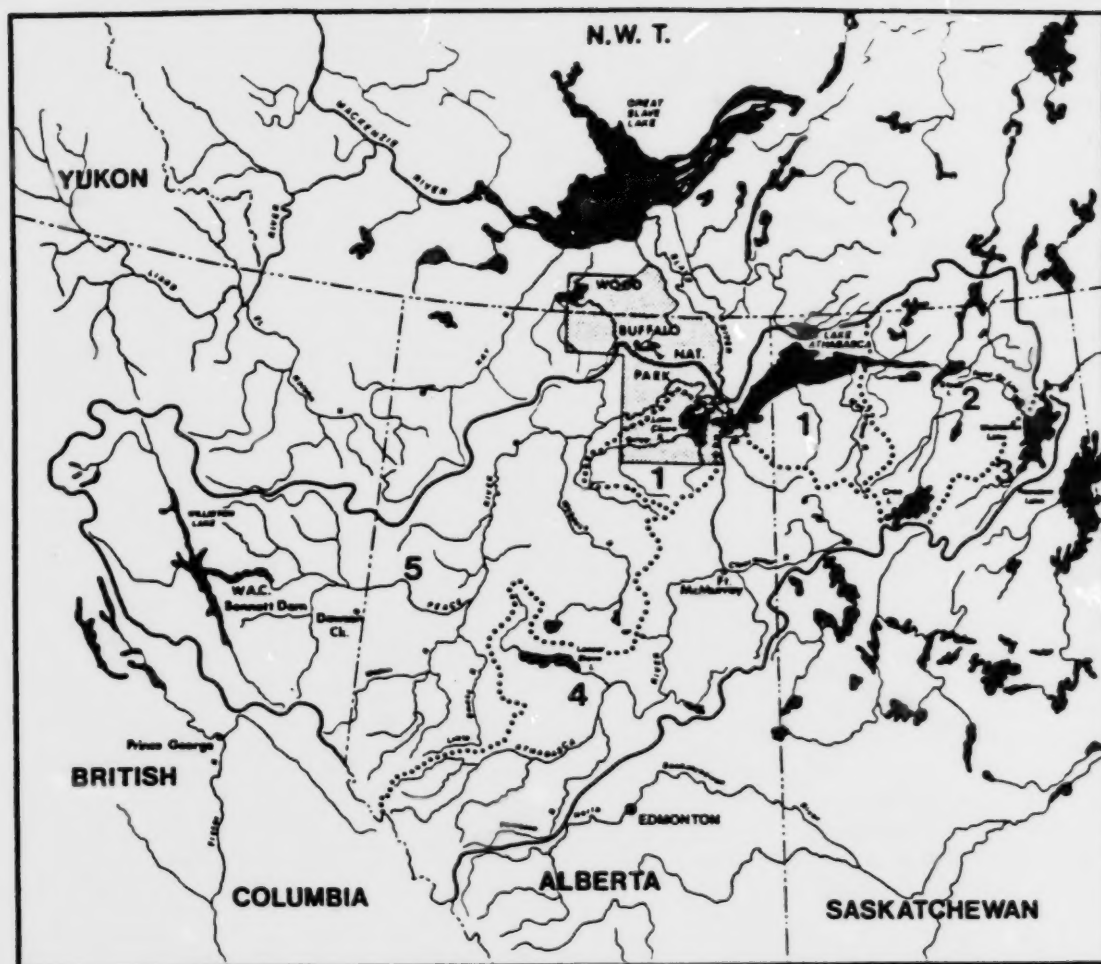
A general discussion is also provided of aquatic resources in the Peace-Athabasca Delta and how these have been impacted by low water levels. The relationship between aquatic resources and the people of the region is discussed, and water management projects identified which could restore virtually all the Delta marshlands to the highly productive state which existed before the Peace River was brought under regulation. Some estimates are provided of the economic benefits which can accrue to the people of the region as a result of water management and renewable resource development programs.

1.0 INTRODUCTION

This paper is based on the very extensive investigations carried out on the Peace-Athabasca Delta during the past 20 years, as well as on personal knowledge of the region gained during the same time span. Chief among Delta studies is the Technical Report of the Peace-Athabasca Delta Project (1973), which described the Delta, its people and its resources in considerably more detail than is possible in this discussion. Although I was involved in the initiation of the Peace-Athabasca Delta Project in 1969, along with Dr. Andrew MacPherson of the Canadian Wildlife Service, and Mr. R. E. Bailey, then Director of Water Resources for the Province of Alberta, it has only been during the past 5 years that I have gained what I believe to be a reasonable perspective of the Delta and its resources and more importantly, of the fundamental relationship between the Delta resources and the people of the region. Any understanding of the relation between the people who live in the Fort Chipewyan region and the resources on which they depend has been learned from the people themselves rather than from the many reports which I have examined over the years. To those people with whom I have been fortunate to work while in the Delta region, I express my thanks.

1.1 DRAINAGE BASINS AFFECTING THE PEACE-ATHABASCA DELTA

The hydrologic regime of Lake Athabasca and the Peace-Athabasca Delta is affected by 5 drainage basins (Figure 1). The smallest drainage area comprises the northern slope of the Birch mountains and flows via the Birch River and the McIvor River directly to Lake Claire, as well as small local drainages off higher ground within the Delta itself. The Fond du Lac River and Wollaston Lake basins in Saskatchewan drain directly into the eastern end of Lake Athabasca. The Williams and McFarlane rivers drain into Lake Athabasca from



- Drainage Basin Perimeter
- 1 Drainage is Direct to Delta and Lake Athabasca
 - 2 Fond du Lac River Basin
 - 3 Wollaston Lake Basin
 - 4 Athabasca River Basin
 - 5 Peace River Basin

Figure 1. Drainage basins affecting water levels in Lake Athabasca and the Peace-Athabasca Delta in northern Alberta.

Canadian Shield highlands on the south shore, as do several smaller drainages from similar rock formations on the north shore. All of the drainages mentioned above are relatively insignificant in comparison to the size of the Peace River and the Athabasca River, and their relationship of these major drainages in turn affects the water levels in Lake Athabasca and the Peace-Athabasca Delta (Peace-Athabasca Delta Project 1973).

1.2 GEOGRAPHY OF THE PEACE-ATHABASCA DELTA

The Peace-Athabasca Delta is a feature of physical geography which is unique in Canada, comprising an area of more than 6,000 km² at the western end of Lake Athabasca (Figure 2). The Peace River portion of the Delta is partitioned from Lake Athabasca by sediment deposits, and is largely dormant with respect to delta-building fluvial processes, with the exception of the mouth of the Birch River, which has built a small sub-delta on the southwest shore of Lake Claire. The Athabasca River portion of the Delta is highly active, continuing to build its margins directly into Lake Athabasca. Aerial photographs from 1966 and 1986 show that relatively large changes have occurred in the Athabasca River portion of the Delta during the past two decades, and these processes can be expected to continue for the foreseeable future.

Historically, both the Peace and Athabasca portions of the Delta were part of Lake Athabasca, but presently the only remnants of Lake Athabasca in the Delta are Lake Claire and Mamawi and Baril lakes in Wood Buffalo National Park, and Richardson Lake and Flour Bay in the Athabasca River portion of the Delta. A detailed description of the Delta can be found in the Technical Report (1973) of the Peace-Athabasca Delta Project mentioned earlier.

The following discussion is intended to provide a brief description of the Fort Chipewyan region and its renewable resources, the importance of these resources to the people of the region, how the use of the resources has been affected by actions outside the control of local people, and what the future may hold. Those who live in the Fort Chipewyan region or who have worked in the Delta will already be familiar with what is to follow. However, it is necessary to provide some background information for those who are not familiar with the area, as well as to orient the discussion to the theme of the Symposium.

1.3 SOME CHARACTERISTICS OF THE DELTA

As may be seen from Figure 2, the Peace-Athabasca Delta is comprised of a number of larger lakes, such as Lake Claire and Mamawi and Baril Lakes in the western portion of the Delta within Wood Buffalo National Park, as well as Richardson Lake and Flour Bay on the southern edge of the Delta complex. Hundreds of small basins and marshy lowlands make up the rest of the Delta. A significant area comprising 28,000 ha of the Athabasca River portion of the Delta is contained in the Chipewyan Indian Reserve No. 201, and a further 20,000 ha of marshland occur on Provincial lands in the lowland complex known as the Grey Wavey Lake marshlands. Each of these areas is of special significance to various groups of people in the vicinity of Fort Chipewyan and will be discussed later. Several thousand hectares of marshland occur also on the east side of the Riviere des Rochers north of Fort Chipewyan. Although not directly connected to the Peace-Athabasca Delta for many decades, the marshlands along the Riviere des Rochers were formed by similar fluvial processes as those which formed the Delta proper, and have similar physical and biological characteristics.

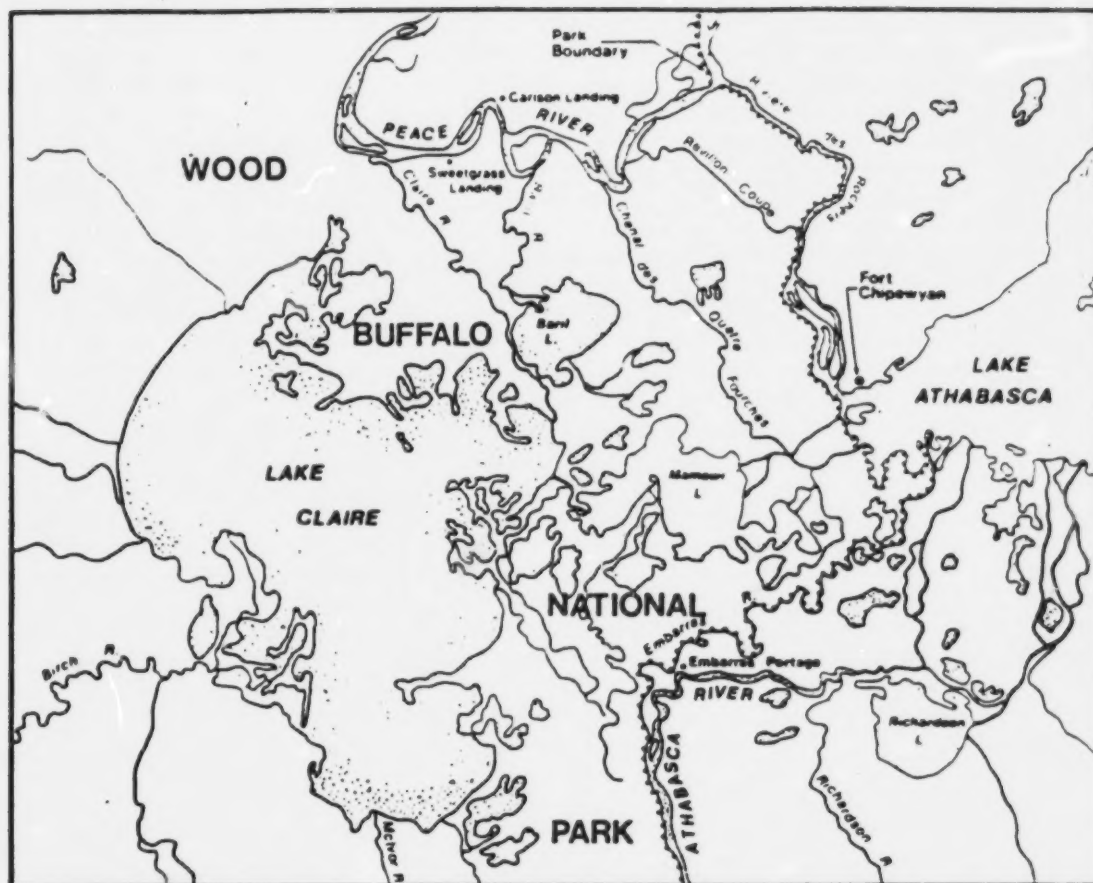


Figure 2. The Peace-Athabasca Delta in northern Alberta.

2.0 WATER LEVELS IN LAKE ATHABASCA

Water levels in Lake Athabasca have been recorded more or less continuously for more than 50 years (Bennett 1970, Townsend 1982). Figure 3 shows water levels in Lake Athabasca from 1962 to 1982, and clearly illustrates the dramatic difference in the 20-year average summer peaks (before the Bennett Dam was built on the Peace River in British Columbia) for the period 1948 to 1967 and for the 15-year period from 1968 to 1982 (after the Bennett Dam was closed in the winter of 1967-68). Figure 3 also illustrates that serious deficiencies occur in the computer predictions of water levels on Lake Athabasca following the construction of remedial weirs on the Riviere des Rochers and Revillon Coupe. Lake levels in winter are about 0.51 m lower than predicted and summer lake levels are about 0.7 m lower than predicted. The levels in winter do not appear to have critically affected habitat in the Delta, but the lower peak water levels in summer have had devastating effects. The specific effects of low water levels in Lake Athabasca on Delta resources will be discussed later.

To summarize what has happened to water levels in Lake Athabasca since 1967, all studies and reviews carried out on the Peace-Athabasca Delta since 1975 (DeBoers 1981, Townsend 1982, Smith 1982) clearly show that since 1967, when the Bennett Dam on the Peace River in British Columbia was closed, the water levels in Lake Athabasca have been significantly lower than they would have been without Peace River regulation. A number of people have stated that the *average* water levels in Lake Athabasca have been about the same since the Bennett dam was built, as they were before the dam was constructed. Such may be the case, but this completely misses the critical fact that high water is required to flood habitat in isolated basins, and this has happened only once in the past two decades, and will have only a one in one hundred chance of happening again in the future. Before 1968, spring flood peaks on the Peace River blocked the outflow of water from Lake Athabasca, and the Peace River also flowed into Lake Athabasca under certain conditions. Construction of submerged weirs on the Riviere des Rochers and Revillon Coupe to remedy the situation have been, as stated by Townsend (1982) "... totally ineffective in restoring summer water levels in Lake Athabasca." This suggests that other means of restoring Delta habitat must be used, by regulating Delta water levels independent of the water levels in Lake Athabasca, and will be discussed in the section dealing with water management projects.

Another way of looking at water level changes in Lake Athabasca is by comparing peak summer water levels in the 33-year period 1935 to 1967 with those of the 14-year period from 1968 to 1981. Only once since 1968 has the water level in Lake Athabasca reached an elevation of 210 m above sea level (asl), whereas prior to 1968, this level was reached every three to four years. An elevation of 210 m asl is the level required to flood the hundreds of perched (isolated) basins so important to the production of waterfowl and muskrats and maintenance of bison habitat. The lake levels discussed above are summarized in Table 1.

Another effect of low water levels in Lake Athabasca has been the alteration of peak water levels in the shallow west end of Lake Athabasca resulting from wind tides (seiches). Figure 4 shows the amplitude of a fluctuation in water level at Fort Chipewyan on 31 May - 1 June 1984 measured over a period of about 28 hours, when the lake rose to a surface elevation of 209.5 m asl after a strong east wind, and then fell to 207.4 m asl after the wind had shifted to a westerly direction. If Lake Athabasca had been about 0.75 m higher (which it would have been in the past before Peace River regulation), the upper level reached as a result of the seiche would have been about 210.2 m (asl, which would have been ample to flood virtually all of the isolated basins of the Delta). Since high water from an east wind can persist for several days at a time, this could have a significant effect in

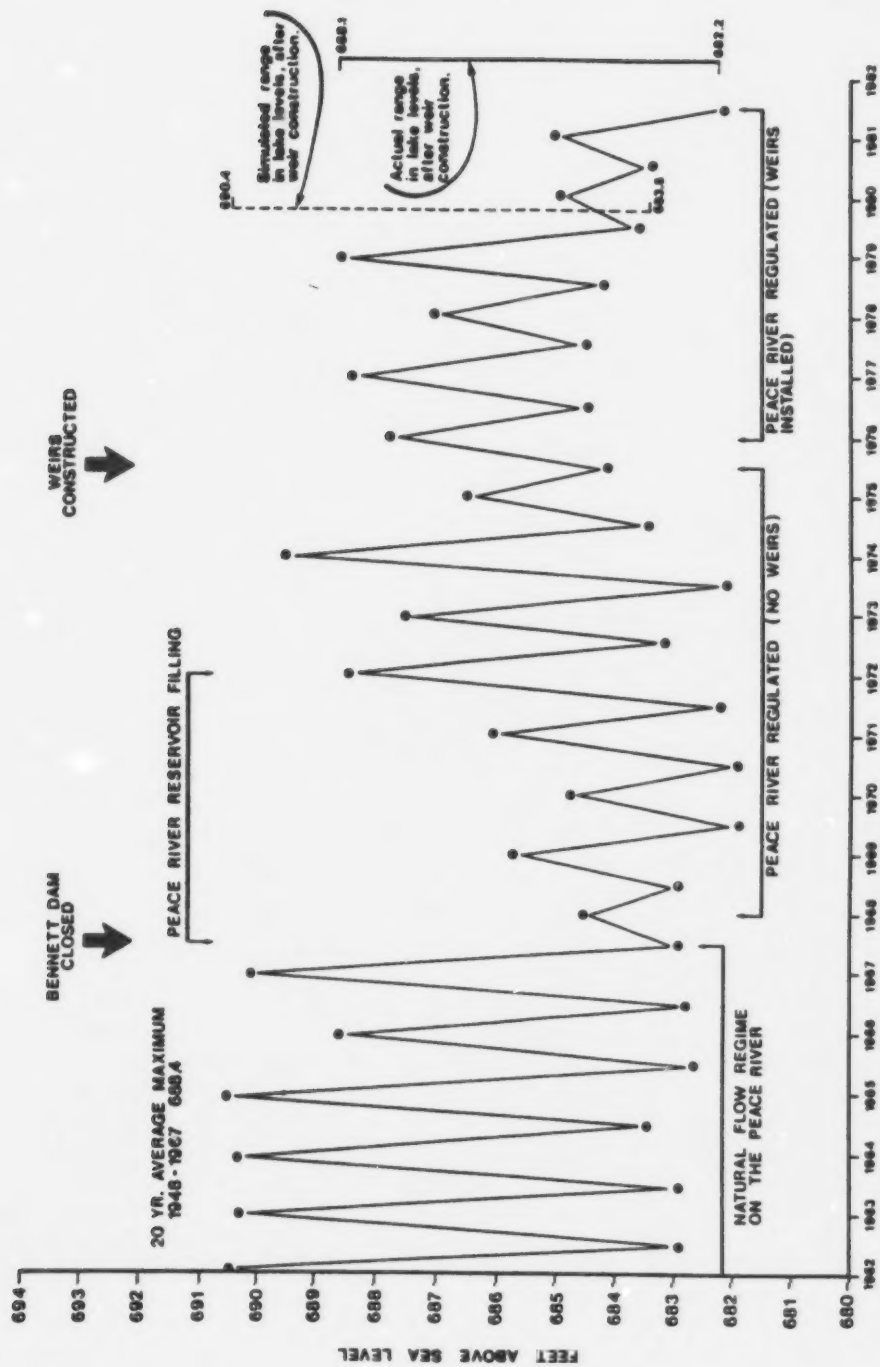


Figure 3. Water levels and related events in the Peace-Athabasca Delta, 1962-1982. (All levels recorded in Lake Athabasca at Crackingstone Point, Saskatchewan.)

Table 1. Percent of years in which Lake Athabasca summer maximum water levels^a were exceeded for two time periods: 1935-1967^b and 1968-1981.

Period 1935-1967		Period 1968-1981	
Summer Maximum	% Levels Exceeded	Summer Maximum	% Levels Exceeded
690	27.3	690	0.0
689	33.3	689	7.7 ^c
688	51.5	688	28.6
687	70.0	687	42.9
686	93.3	686	64.9

^a Feet above sea level at Cracking Stone Point, Saskatchewan.

^b Bennett Dam on the Peace River closed in December 1967.

^c Only in 1974, a 1/100 year flood event.

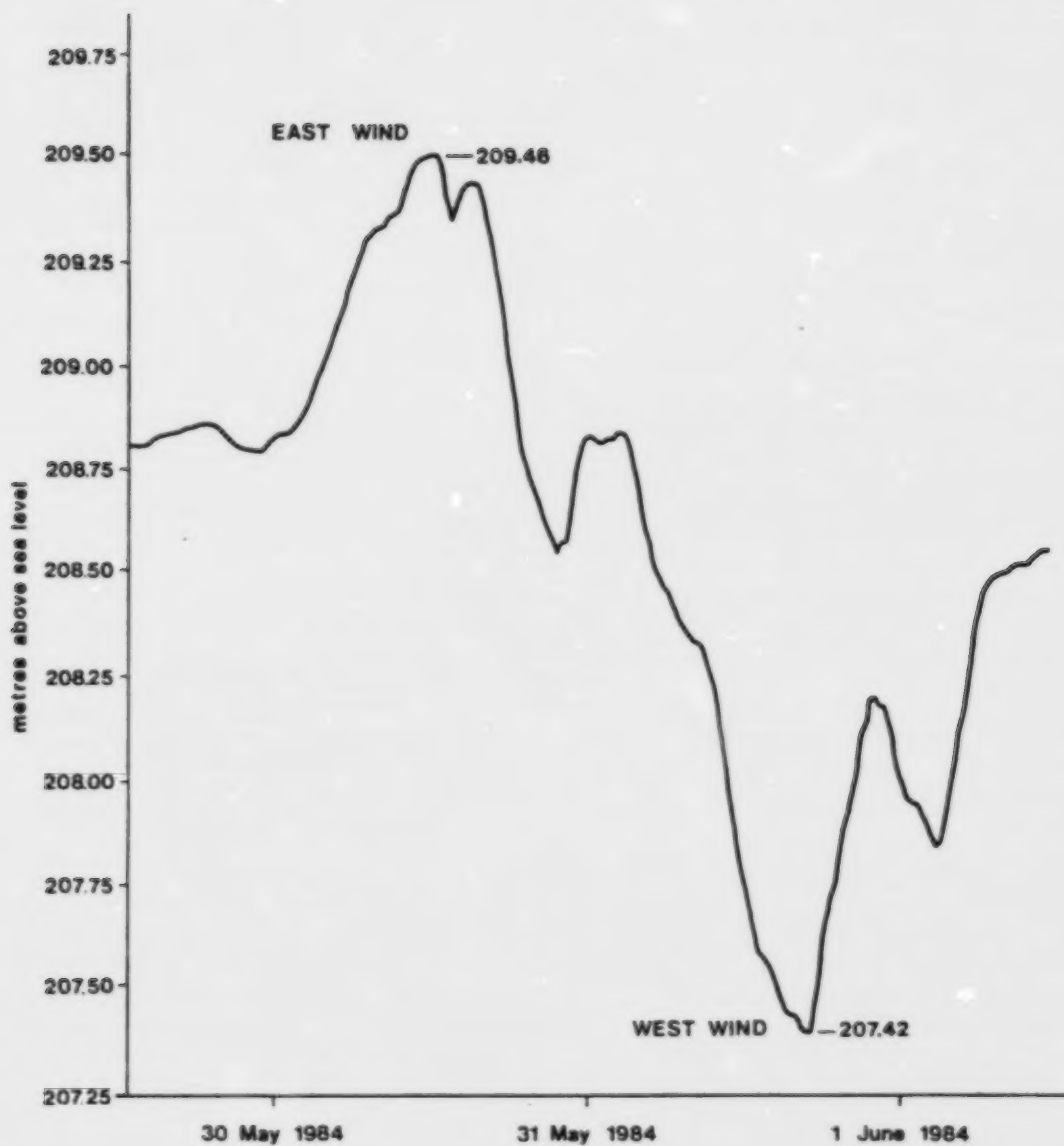


Figure 4. Large fluctuations in water level on Lake Athabasca between 30 May and 1 June 1984 as a result of a seiche (wind tide) on the lake. (The plot is taken from records of Alberta Environment at Fort Chipewyan, Alberta.)

recharging small, isolated basins in the Delta, particularly during midsummer when Lake Athabasca normally reaches its summer maximum level. However, the summer peak water levels in Lake Athabasca will not reach a sufficient height in all but years of extraordinary flood conditions for wind tides to be significant in the future in their effects on the environment of the Peace-Athabasca Delta.

3.0 RESOURCE USERS IN THE PEACE-ATHABASCA DELTA

Before dealing specifically with the impacts on resources of low water levels in Lake Athabasca and the Peace-Athabasca Delta, the users of the resources in the Delta should be identified with the areas of most frequent resource use activities in the Fort Chipewyan region. Three major groups are listed below.

3.1 CREE INDIAN BAND

The largest number of users of Delta resources are members of the Cree Indian Band of Fort Chipewyan. A land claim settlement between the Band and the Government of Canada recently has been approved by a vote of the majority of Cree Band members. This may change the resource use picture somewhat for Cree Band members at Fort Chipewyan, and in particular may affect trapping, fishing and hunting by Cree Band members in the south end of Wood Buffalo National Park. The use of fish and wildlife in the Park by Cree Indians has been a traditional part of their way of life for more than 100 years, and this traditional use has been guaranteed as part of the agreement between the Fort Chipewyan Cree Indian Band and the Government of Canada.

3.2 THE ATHABASCA CHIPEWYAN BAND

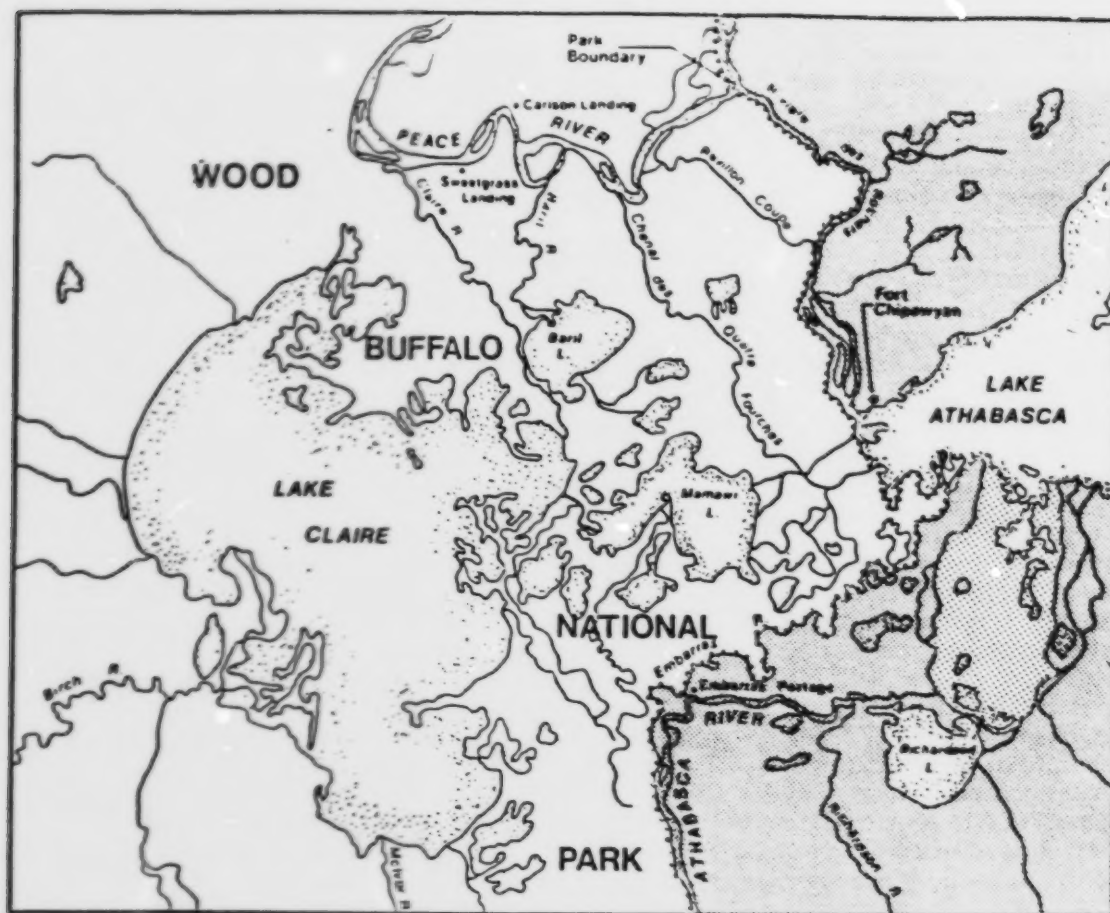
A second major resource user group in the Peace-Athabasca Delta is the Athabasca Chipewyan. This use is centered largely on the Chipewyan Indian Reserve No. 201, and its 28,000 ha comprise about one-third of the Athabasca River portion of the Peace-Athabasca Delta. This area is one of the most productive in the whole of the Delta, and will be discussed in more detail later.

3.3 FORT CHIPEWYAN METIS ASSOCIATION

The Metis of Fort Chipewyan are the major users of fish and wildlife resources on Provincial Crown lands in the Fort Chipewyan region. The Metis residents of the region hold most of the registered traplines on Provincial Crown land, and trap, hunt and fish on Provincial land surrounding the Chipewyan Indian Reserve No. 201, on the lowlands on the east side of the Riviere des Rochers, and on the Canadian Shield uplands north and east of Fort Chipewyan, as well as the uplands south of Lake Athabasca.

3.4 OTHER RESOURCE USERS

Some status Indians and non-Natives trap on Provincial Crown land, but their numbers are insignificant in comparison to the three user groups discussed above. Principal areas of use are shown in Figure 5.



USER LEGEND

-  Cree resource use in Wood Buffalo National Park
-  Chipewyan Indian resource use on
Chipewyan Indian Reserve No. 201
-  Metis and non-native resource use on
Provincial Crown Land

Figure 5. Principal areas of renewable resource harvesting (fish and wildlife) by three user groups in the Fort Chipewyan region in northern Alberta.

4.0 ECOLOGICAL IMPACTS OF LAKE ATHABASCA WATER LEVELS

Earlier, the categorical statement was made that low summer peak water levels in Lake Athabasca and the Peace-Athabasca Delta have had devastating impacts on Delta resources.

The whole of the Peace-Athabasca Delta is affected by water levels in Lake Athabasca as far upstream as 30 km on the Athabasca River. In the past, before the Peace River was dammed, the productivity of the Delta resulted from frequent overland flooding which introduced nutrients to Delta lowlands each year, and resulted in maintenance of adequate water levels for winter survival of muskrats. The smaller basins recharged by high summer water levels are also highly productive for waterfowl and bison (particularly for winter forage). These sedge meadows are particularly dependent for successful maintenance on an adequate hydrologic regime.

The larger basins of the Delta (Lake Claire and Mamawi and Baril lakes in Wood Buffalo National Park and Richardson Lake and Flour Bay in the Athabasca River portion of the Delta) are also important for fish. These larger basins provide spawning and rearing areas for walleye, goldeye, pike and whitefish as well as for other species of fish, and as staging areas for over 1,000,000 waterfowl in some years. The annual hydrologic regime is also the reason for the successful maintenance of large numbers of bison in the region since these animals are very dependent on adequate food in winter for survival and successful reproduction (Fuller and LaRoi 1971). Any significant change in the annual hydrologic regime which persists over a long period of time is therefore certain to have a subsequent significant impact on the Delta environment and its living resources. The studies carried out by the Peace-Athabasca Delta Project (1973) clearly show that large fluctuations in water levels on Lake Athabasca are the key to maintaining biological resources of the Delta in a healthy state, and that distribution and health of plant communities are a direct result of the frequency and amplitude of water level fluctuations (Doherty and LaRoi 1973). Not only have the submerged weirs on the outlet channels from Lake Athabasca failed to provide recharge to isolated basins, but also the shape of the hydrographs clearly is not what is required to maintain a healthy Delta environment. The observed effects on the Delta environment have not only been devastating to the muskrats and other furbearers of the Delta, but the long-term progression in habitat deterioration will continue, without water management programs.

Because all the birds and mammals (and possibly some species of fish) in the Delta are dependent to some degree at least on the vegetation in Delta marshlands, the impact on these resources of any long-term shift in the annual hydrologic pattern cannot be over-emphasized. Over 270 species of birds have been recorded in the Delta, with the majority of these being summer residents. Over 1,000,000 waterfowl may breed or stage in the Delta during the period between late April and early October. The total muskrat population in the Delta has never been accurately enumerated, but in one winter (1975-76) about 200,000 muskrat pelts were sold by Fort Chipewyan trappers, and this figure represents only a portion of the total muskrat population at that time. Other furbearers (lynx, fox, coyote, mink) which predate on muskrats, also increase when muskrat populations are high. Several studies have shown (Kristensen and Summers 1976, Kristensen 1979) that Delta basins are important spawning and rearing areas for fish. It also has been demonstrated (Smith and Guinn 1982) that for walleye (and presumably also for goldeye) the volume of water in summer rearing areas is of critical limiting importance to the production of larval fish, which depend on zooplankton almost exclusively for food during their first summer after hatching. Depth (and consequently volume) of water in the larger Delta lakes in summer has been reduced by about 80% as a direct consequence of low summer water levels in Lake Athabasca and the Peace-Athabasca Delta. No information is

available as to the total numbers of fish in the Peace-Athabasca Delta, but it is likely that a downward trend in population size has occurred for walleye and goldeye, or will occur with continuing reduction in rearing capacity of Delta lakes.

Although scientific documentation of damage to biological resources on the Delta since 1967 is spotty, some obvious facts emerge. Muskrats have been eliminated from Delta lakes as a source of income for a large number of trappers at Fort Chipewyan. Large amounts of bison habitat have been lost and bison habitat will continue to deteriorate as a result of changes to plant communities. Waterfowl production has been eliminated from hundreds of isolated basins which have dried out completely during the past 19 years. No precise information is available for loss of production of larval fish, but reason dictates that it has occurred, and will continue to occur. The important point to consider is that many of the changes take place over a number of years, and are not visible until the situation is beyond recall.

The foregoing comments paint a gloomy picture for the future of the biological resources of the Peace-Athabasca Delta, as well as for a large number of residents of Fort Chipewyan who rely on fish and wildlife for direct sustenance or for cash income. However, the picture need not be as bleak as I have indicated, provided action is taken to restore the resources of the region, and the remainder of this discussion will focus on: (1) possibilities for economic development options at Fort Chipewyan based solely on renewable resources, (2) identification of potential development projects, and (3) preliminary estimates of economic benefits from renewable resource developments to residents of the Fort Chipewyan region.

5.0 DEVELOPMENT OPTIONS

From a number of studies carried out during the past five years (Carroll 1983, Smith 1983) it is apparent that a number of options are available for economic development at Fort Chipewyan. The position is taken that the most viable economic development options must be based on renewable resources, and that the highest priority should be given to a development strategy which satisfies the following criteria:

1. The development strategy should involve the implementation of small, sequentially staged renewable resource enhancement projects which have proven technical feasibility and which can be managed by local people.
2. The development strategy must involve the local residents from its earliest stages, so that they are part of the implementation process, can offer advice on development direction, and can be involved in community education and training programs, which must be built at every stage.
3. Projects with large capital requirements, sophisticated management needs and significant market risks must be rejected.
4. The development strategy must be aimed at achieving local control as soon as possible after implementation, and should minimize the involvement of consultants and outside managers on a continuing basis.

6.0 DEVELOPMENT DIRECTIONS

Economic development direction at Fort Chipewyan must take into account the current economic and environmental conditions in the region. The report of the Peace-Athabasca Delta Project (1973), plus a recent update by Carroll (1983) show that since 1967 economic opportunities have been sharply reduced for the predominantly Native population of Fort Chipewyan. Drastic reductions in income for residents of Fort Chipewyan are related primarily to collapse of the commercial fishery and to the elimination of fur trapping in the Delta. Commercial fishing has increased at Fort Chipewyan during the past two years, primarily because of the availability of a transportation subsidy to aid in getting fish to the market, and construction of a fish plant in the community may allow further expansion. However, the fishery at present is based almost entirely on a single species (walleye), is highly vulnerable to market forces, and employs only a small number of people for a short period during the early summer. During the past few years also a series of forest fires on upland areas has virtually eliminated trapping on many of the region's registered traplines, further accelerating the economic turndown in Fort Chipewyan.

The question must now be asked as to whether the Fort Chipewyan region has any reasonable prospects for economic recovery and long-term economic viability. All the available evidence suggests that the answer is positive, and that a huge potential exists for economic development, mostly through the restoration of wetlands and active management of aquatic resources in the Peace-Athabasca Delta. During the 1973-1978 period, over \$1,600,000 was realized from the sale of muskrat pelts taken by Delta trappers (Smith et al. 1984), following flooding of the Delta in 1971 and 1974. It should be emphasized again that the lakes on the Delta which produced such a good fur harvest a few years ago now are mostly dry, with the exception of some basins on the Chipewyan Indian Reserve No. 201, where water management projects were carried out in 1984, by constructing recharge ditches from Athabasca River channels to isolated basins on the Reserve. A muskrat survey carried out by J. E. Green (pers. comm.) in mid-April of 1986 clearly shows that muskrat numbers are increasing rapidly in the restored basins, and that trapping can take place in the winter of 1986-87. These restored basins are shown in Figure 6.

During the past year (1985) preliminary surveys also were carried out on a number of other areas in the Delta region to determine the prospects for water management on Provincial Crown land in the Peace-Athabasca Delta. One of these areas to the east of the Chipewyan Indian Reserve No. 201 lies between Big Point Channel and the Tokyo Snye Channel (Figure 6). A second large water body, Flour Bay is located on Provincial Crown land and covers about 1,600 ha on the northern end of and virtually surrounded by the Chipewyan Indian Reserve No. 201 (Figure 6). Both of these areas can easily be restored to a productive capacity with a recharge channel at Location "D" to recharge the Tokyo Snye basins and by means of a low dyke across the narrow mouth of Flour Bay at Location "E".

A major wetland area lies to the west of the Chipewyan Indian Reserve No. 201 between Fletcher Channel and the Embarras River, the west bank of which is the boundary of Wood Buffalo National Park. Small dams could easily be constructed at locations 1 and 2 in Figure 7 and would result in stabilization of more than 2,400 ha of marshland habitat. My understanding is that the Alberta Fish and Wildlife Division is considering the construction of a pilot project in this area during the summer of 1986. All the areas discussed above lie in the Athabasca River portion of the Peace-Athabasca Delta, and in total would represent more than 10,000 ha of highly productive marshland habitat, if brought under active water management.

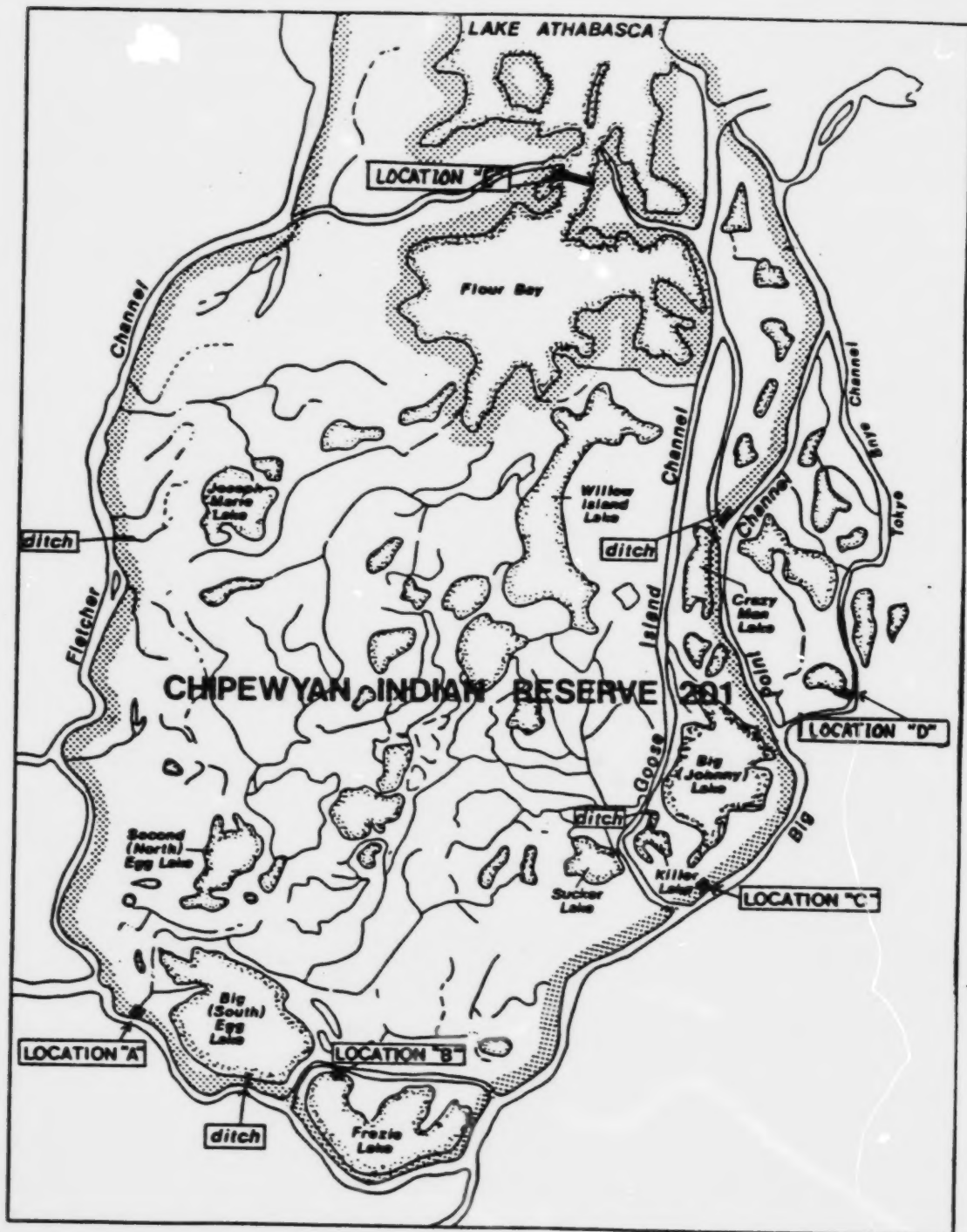


Figure 6. Schematic of the Chipewyan Indian Reserve No. 201 in the Fort Chipewyan region of northern Alberta. (Recharge channels have been dug at locations "A" and "B" and will be completed at locations "C", "D" and "E". Area of potential marshland restoration is 10,000 ha (25,000 acres).

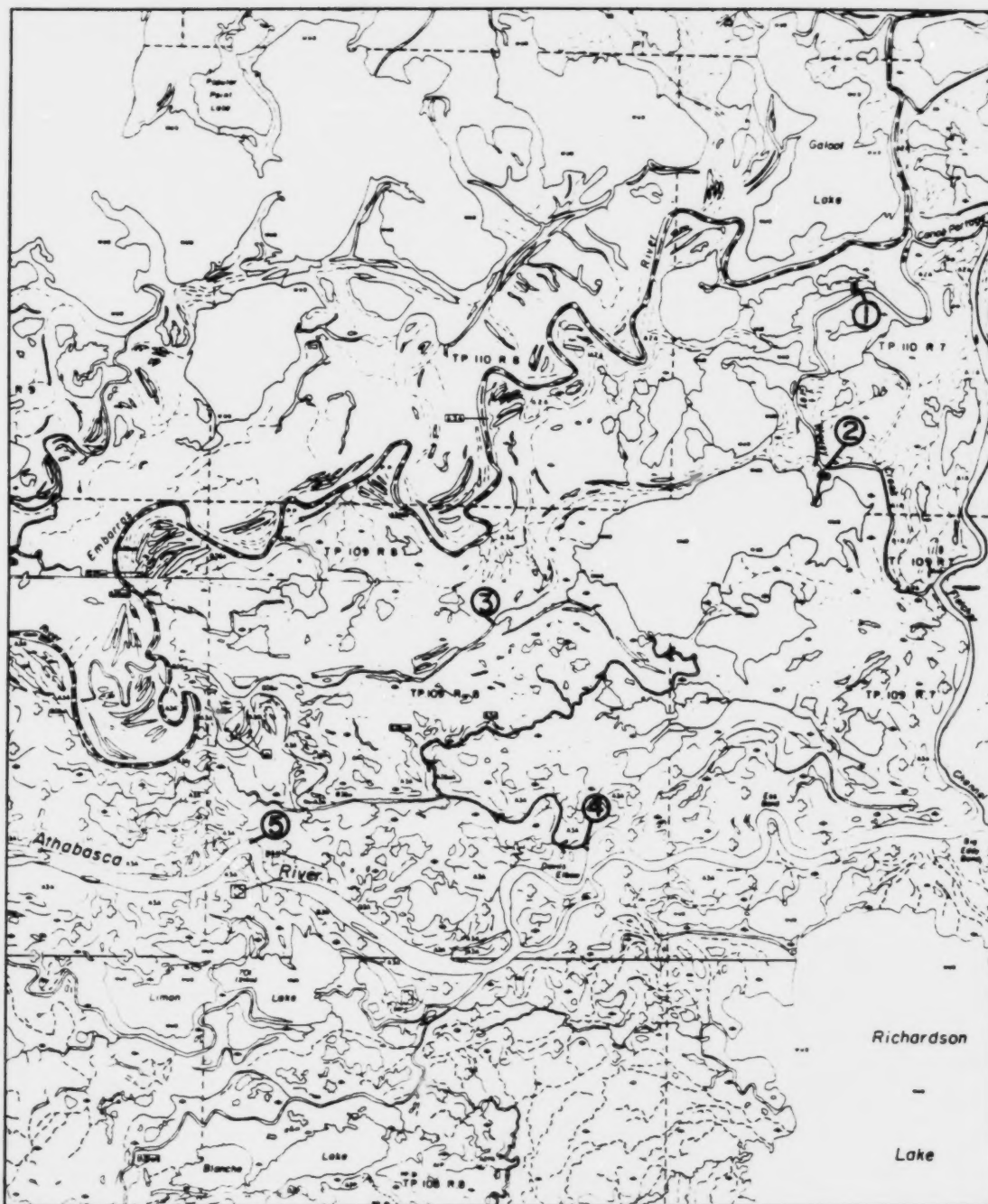


Figure 7. Grey Wavey Lake marshlands showing locations of downstream controls (1) and (2) ; the interconnections between Grey Wavey Lake and Bog /Mud Lakes (3); the existing upstream recharge channel (4) and alternate upstream recharge location (5).

To the north of Fort Chipewyan, within a 40 km radius of the community, lie other lowland areas or Canadian Shield lakes which can easily be managed for the production of aquatic resources. In two of these lakes with good access by road from Fort Chipewyan (Third Lake and Fourth Lake), wild rice was planted in 1984 and 1985, and is reproducing successfully. The economic potential for wild rice will be discussed later.

Along the east bank of the Riviere des Rochers, about 20 km north of Fort Chipewyan, lies the Maria Creek marshland complex, comprising an area of about 1,600 ha. This area presently is dry, except for snow meltwater in spring, but could easily be restored as a highly productive marshland by construction of a small dam on Maria Creek. A similar area about 20 km further north is Flett Lake, covering about 1,200 ha. This area could also be restored by construction of a small dam on Flett Creek.

7.0 ECONOMIC POTENTIAL OF MANAGED MARSHLANDS IN THE PEACE-ATHABASCA DELTA

To summarize this discussion, I would like to speculate a little on what managed marshlands might produce in the way of economic benefits for residents of the Fort Chipewyan region. These estimates of economic benefits are based on known production levels of aquatic resources, but have been deliberately kept conservative.

Based on fur production only, it seems clear that 10,000 ha of managed marshlands could produce more than \$1,000,000 per year in direct income to local residents of Fort Chipewyan. It is known, for instance, that ideal water conditions for muskrats are ideal also for production of wild rice, which has been planted successfully in eleven locations in the Peace-Athabasca Delta in 1984 and 1985. Furthermore, a wild rice expert who surveyed the area in 1983 and 1984 judged it to be superior in its potential for growing wild rice than many other areas in Canada. If a price of \$5.00/kg is used as a basis for calculation, and a production rate of about 115 kg/ha, 10,000 ha would produce a revenue of \$5,000,000 per year. Even if only 20% of the assumed production rate were to be achieved, there would be an economic return of \$1,000,000 per year from wild rice. If the economic potential from wild rice and muskrats is combined, the revenue for local residents of Fort Chipewyan clearly is more than \$2,000,000 per year. It should also be emphasized that the initial capital cost for managed wetlands in the Peace-Athabasca Delta is very low, and that both wild rice and muskrats will maintain a healthy state without much input from man.

8.0 CONCLUSION

This discussion has been confined only to the potential for two renewable resources--muskrats and wild rice. However, there is a very large untapped potential in the region for guided sport hunting for waterfowl, sport fishing for trophy pike and walleye, tourist use of the Canadian Shield to the north and east of Fort Chipewyan, and bird watching and bison viewing in Wood Buffalo National Park. I have refrained from discussing the use of resources in the Park because it is the subject for examination by others at this Symposium. However, I would like to say that the Delta portion of the Park will never be productive, or reach its potential for providing economic benefits to Fort Chipewyan, unless the water levels in this part of the Park are restored by installation of water control structures, and by managing water levels to return the Park to the state in which it existed before the Peace River was brought under regulation.

It seems to me to be appropriate in concluding this discussion to return to the keynote address of this Symposium by Bill Wilson. Mr. Wilson is much more qualified than I am to judge how the social and economic future of Indian people relates to renewable resources. Perhaps alone I would not have said that there can only be a viable economic future for Indian and Metis people in Fort Chipewyan based entirely on their use of natural resources in that region. But having heard Mr. Wilson so eloquently put forward that point of view, I have no hesitation in making the same statement without qualification. There are many more options for economic development in the Fort Chipewyan region than those which I have discussed. It may take a little time for the full potential of the region to be reached, but I am confident it will happen with local initiatives and local management skills. All it will take is a little planning and a little help from governments, plus the energetic involvement of local people.

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LOCAL AND NATIVE HIRE IN RENEWABLE RESOURCE MANAGEMENT: AN ALASKAN CASE

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***ABSTRACT:** Employment in resource management agencies is one obvious route for Native people to participate in renewable resource management. Native people have valuable knowledge, skills, and perspectives to contribute to resource management. In some areas, the success of management may hinge on their involvement. However, there exist a wide variety of barriers to the employment of Native people and their effectiveness in resource management agencies. Moreover, employment in these agencies can also pose special problems for Native people. The Division of Subsistence is the branch of the Alaska Department of Fish and Game with responsibility for compiling data on Alaskans' use of fish and wildlife. The division has made a concerted effort to hire local and Native people with mixed success. This paper describes the experience of the Division of Subsistence, attempts to draw some general conclusions about successful employment of Native people in resource management, and makes recommendations. While some of the benefits, advantages, and problems of Native hire are unique to Alaska, others may be relevant in Canada.*

1.0 INTRODUCTION

In 1978, the State of Alaska created a socioeconomic research program within the Alaska Department of Fish and Game. This program, the Division of Subsistence, compiles data and conducts research on the use by Alaskans of fish and wildlife resources. Such information is applied to the management and regulatory processes, and contributes to departmental assessments of proposed state and federal land use planning projects. The Alaska Department of Fish and Game may be the only state fish and wildlife agency in the United States to have established a social science research unit as part of its research program.

The Division of Subsistence currently has a staff of about 50 persons stationed in eleven locations across the state, about 20% of whom are of Alaskan Native ancestry. The Division has placed a high priority on Native and local hire since beginning operations in 1979. Since much of the Division's work occurs in areas of the state which are predominantly Native, employees who are familiar with local languages, customs, and subsistence practices can greatly facilitate data collection. Similarly, they can strengthen lines of communications between those who manage and those who harvest and use Alaska's fish and wildlife. However, the Division has experienced difficulties in expanding its local and Native hire efforts, ranging from administrative hurdles and policies to the personal difficulties that working in a resource management agency can pose to Native people and other residents of rural communities.

This paper begins by describing the activities of the Division of Subsistence and the political and institutional context of fish and wildlife management in Alaska. Although this is a very brief overview, it is useful in providing a framework within which the Division's experience with local and Native hire can be assessed. Additional background on the Division and its work is provided by Kelso (1981, 1982) and Lonner (1980, 1981).

2.0 FISH AND WILDLIFE MANAGEMENT IN ALASKA

Since statehood in 1959, the State of Alaska had assumed primary responsibility for management of resident fish and wildlife species, including anadromous fish. The United States federal government has retained management authority for migratory waterfowl, marine mammals, and certain offshore fisheries. The Alaska Department of Fish and Game (ADF&G) is the state agency charged with managing resident fish and wildlife, with various management and technical support tasks being performed by seven divisions: Boards, Commercial Fisheries, Fisheries Rehabilitation and Enhancement, Game, Habitat, Sport Fisheries, and Subsistence.

Hunting, fishing and trapping in Alaska are regulated by the Alaska Board of Fisheries and Board of Game. Each board consists of seven members appointed by the Governor. The boards meet jointly and separately twice each year for up to several weeks to add, modify, or delete hunting and fishing regulations. Proposals for changes in the regulations can be submitted by state and federal agencies, organizations, and individual members of the public. In addition, there are approximately 75 local fish and game advisory committees across the state which meet periodically to develop regulatory proposals, review and comment on proposals made by others, and to provide user input at board meetings. ADF&G, through its Division of Boards, provides technical and financial support of these advisory committees. The advisory committee chairmen are further organized into six regional councils, which have special authority with respect to subsistence regulations. This will be discussed below.

ADF&G provides support to the Boards of Fisheries and Game, in the form of biological and human use data, as they make regulatory and allocation decisions. It also carries out in-season management activities (such as openings and closures), following guidelines set forth by the boards. ADF&G also may be asked to conduct specific studies and provide particular data for use at future board meetings.

Enforcement of hunting and fishing regulations is primarily the responsibility of the Alaska Department of Public Safety, Division of Fish and Wildlife Protection. This agency is not part of ADF&G, although some ADF&G staff are deputized and may carry out enforcement activities in the course of their work. Division of Subsistence staff do not have enforcement powers.

The U. S. Fish and Wildlife Service (USFWS), an agency within the U. S. Department of Interior, manages migratory waterfowl and certain marine mammals in Alaska. Additionally, the USFWS is responsible for management of several national wildlife refuges in the state. Other federal agencies with major land management commitments in Alaska include the Bureau of Land Management, the National Park Service, and the U. S. Forest Service. Since passage in 1980 of the Alaska National Interest Lands Conservation Act (ANILCA), these federal agencies have had special responsibilities relating to subsistence. The following sections briefly summarize the relationship between the federal government, Native peoples and subsistence in Alaska.

For a more detailed assessment of this relationship, the reader is referred to the book, Alaska Natives and American Laws (Case 1984).

3.0 ALASKA NATIVE LAND CLAIMS

In the late 1950s and early 1960s, state land selections under the Alaska Statehood Act and certain judicial decisions began to threaten Alaska Native land claims. U. S. congressional action on these claims was spurred by major oil discoveries on Alaska's North Slope in the late 1960s, culminating in 1971 with passage of Public Law No. 92-203, the Alaska Native Claims Settlement Act (ANCSA).

Early versions of the ANCSA legislation included provisions for human services and protection for subsistence hunting and fishing. Nevertheless, the final bill passed by the U. S. Congress dealt only with settling claims to the land. This was accomplished primarily through conveyance of some 44 million acres of land and a cash payment of almost \$1 billion to newly-created Alaska Native corporations. ANCSA included a clause which specifically extinguished aboriginal hunting and fishing rights in Alaska. In the legislative history which accompanied the bill, however, the Congress clearly stated its expectation that state and federal policies would protect subsistence for Alaska Natives. ANCSA also set the stage for the next major federal legislation involving land and subsistence in Alaska by requiring a review of wilderness values on the remaining federal lands.

4.0 ALASKA NATIONAL INTEREST LANDS CONSERVATION ACT

The U. S. Congress passed the Alaska National Interest Lands Conservation Act (ANILCA) in 1980, following a major "freeze" on the disposal of federal lands in Alaska. ANILCA established some 80 million acres of major new national wildlife refuges, parks, preserves, monuments, and forests throughout Alaska. Title VIII of ANILCA deals with subsistence management on federal public lands in Alaska and provides, in part:

"It is hereby declared to be the policy of congress that--(1) consistent with sound management principles and the conservation of healthy populations of fish and wildlife, the utilization of public lands in Alaska is to cause the least adverse impact possible on rural residents who depend upon subsistence uses of the resources of such lands; . . . (2) non-wasteful subsistence uses of fish and wildlife and other renewable resources shall be the priority consumptive uses of all such resources on the public lands of Alaska . . ."

In keeping with this policy, Section 805 of ANILCA provides that the state may continue to manage fish and wildlife on the federal public lands if it implements laws which (a) define subsistence uses as ". . . the customary and traditional uses by rural Alaska residents of wild renewable resources for direct personal or family consumption . . ."; (b) give these uses a priority over other consumptive uses; and (c) provide for regional advisory councils with authority to make recommendations on subsistence regulations. The state must adhere to these laws unless they are not supported by substantial evidence, if they violate recognized principles of fish and wildlife conservation, or if they would be detrimental to the satisfaction of rural subsistence needs.

ANILCA also provided for subsistence hunting and fishing in most of the new national parks, preserves, and monuments established in Alaska. This is a major departure from traditional park management policies in the United States. Section 810 of ANILCA

set up an impact assessment procedure which federal land management agencies are required to follow before taking any action that could affect subsistence uses on public lands.

5.0 THE STATE OF ALASKA SUBSISTENCE STATUTE

The Alaska legislature adopted a subsistence statute in 1978, two years before passage of ANILCA. The state and federal laws are similar in most respects, except that until 1986, the state law did not specifically limit the subsistence preference to rural Alaska residents. However, the Boards of Fisheries and Game interpreted the law such that it gave rural residents this preference by regulation. In 1981, the federal government determined that the state was in compliance with the requirements of ANILCA.

From 1981 to early 1985, the boards began developing and applying procedures for implementing the state subsistence statute. General criteria were established for determining which uses of fish and wildlife were subsistence uses, and who qualified to use these resources for subsistence purposes. The Division of Subsistence, other divisions in ADF&G, and local fish and game advisory committees played key roles in assisting the boards with this task. The Division of Subsistence, for example, conducted systematic research and provided detailed information on the characteristics of resource use and socioeconomic organization in communities throughout the state (e. g., Wolfe and Ellanna 1983).

Recent events, while not central to this discussion, have forced major changes in implementation of the subsistence statute. In early 1985, the Alaska Supreme Court ruled in the Madison case that the boards had misinterpreted the state law and could not restrict subsistence uses only to rural residents. Consequently, the state statute no longer complied with the federal law, which clearly restricted subsistence uses to rural residents.

The state administration in 1985 introduced an amendment to the statute which would bring it into conformity with federal law. The state legislature passed an amendment in May 1986 which specified that subsistence uses are uses by rural Alaskans, thereby bringing state law into compliance with federal law. If action had not been taken by this date, federal agencies were planning to assume management responsibilities for fish and wildlife on federal lands in Alaska. The end result might well have been a very different approach to fish and wildlife management.

6.0 THE DIVISION OF SUBSISTENCE

Both the state and federal subsistence laws recognize the need for research on subsistence uses of fish and wildlife in Alaska. The Alaska legislature addressed this need by establishing the subsistence section (later reclassified as a Division) in ADF&G and directing it to: "... compile existing data and conduct studies to gather information, including data from subsistence users, on all aspects of the role of subsistence hunting and fishing in the lives of residents of the state." The Division also was directed to make this information available to the public and appropriate agencies, and to assist ADF&G and the boards in determining what were subsistence uses and subsistence methods.

Standard social science research methodologies are used by the Division of Subsistence in assessing and describing subsistence use patterns in Alaska. These methods include literature reviews, participant observation, key informant interviews, household and mail surveys, and combinations of these methods. Detailed research designs are

prepared for each research project undertaken, are reviewed and must be endorsed by the governing body of the study community before fieldwork commences. Local fish and game advisory committees frequently participate in project design and development and, along with local community representatives, are afforded the opportunity to review draft reports and other project materials prior to publication. Research projects are developed with careful attention given to selection of research sites, study goals, sampling design, and to the expected applications of the study findings.

The Division's headquarters staff consists of the director, a deputy director, administrative assistant, and a research director. The research program is structured around six geographic regions that correspond to the boundaries of the advisory committee and regional council system, and is supervised by four regional supervisors with graduate degrees in anthropology or related fields, and backgrounds in resource management. Subsistence resource specialists are the primary researchers in each region and, typically, have bachelor's or master's degrees in social science or resource management. Fish and game technicians work in most regions. They often are lifelong residents who speak the local language and have experience in subsistence activities. Finally, the Division has a small data management staff, which assists with development of survey instruments, data entry and analysis, and with storage and retrieval of the continually expanding data base.

The Division publishes its research findings in a technical paper series, which currently includes more than 120 titles (Division of Subsistence 1985). These reports typically include descriptions of subsistence uses of fish and wildlife, community economies, seasonal rounds of activity, annual harvest statistics, and detailed maps documenting geographic areas utilized for seeking and harvesting fish, wildlife, and plant resources. Reports are used for a variety of purposes, including land use planning, resource management, and community development programs. Paper copies of the reports are available for use at several locations, including the Boreal Institute for Northern Studies library in Edmonton, Alberta; The Center for Northern Studies in Wellcott, Vermont; and several locations in Alaska. Microfiche copies are on file at the National Library of Canada in Ottawa; the University of Washington and Washington State University libraries; the Center for Research Libraries in Chicago; and the Library of Congress in Washington, D. C. Further information about these technical reports can be obtained from the authors.

7.0 THE DIVISION OF SUBSISTENCE EXPERIENCE WITH LOCAL AND NATIVE HIRE

The ability to hire local and Native persons has been central to the success of the Division of Subsistence research program. It has enabled the Division to benefit from the specialized knowledge and skills these staff possess and has promoted improved communication between ADF&G and local communities throughout Alaska. Relationships between those who harvest and those who manage resources sometimes are strained by mis-communication and misunderstandings. Division staff have assisted in bridging some communication gaps and in building stronger cooperative relationships with Native and other rural residents.

State hiring procedures have been a major impediment to hiring Native persons. For example, the subsistence resource specialist positions require that the incumbent have a college degree. Although the Division has successfully recruited and hired two Native staff with college diplomas (one has a master's degree), many other capable candidates lack the requisite education and are ineligible for these lead research positions. As noted earlier, technicians hired by the Division frequently are local or Native residents of the areas in which they will be working. Their skills include familiarity with residents and

communities of the area, experience in subsistence activities, and bilingualism. Technicians occasionally function independently, but more typically work with a subsistence resource specialist as a team. Technicians have played important roles in helping to inform local residents about fishing and hunting regulations and the regulatory process.

The Division has been fortunate to have hired a woman of Native heritage as deputy director. She assumes responsibility for administrative and personnel matters, locates and recruits Native persons for jobs in the Division and assists in liaison activities with other divisions and Native organizations. On a broader scale, the deputy director has been assigned to assist in improving ADF&G's overall local and Native hire record.

Working closely with the Department of Anthropology at the University of Alaska, the Division has been able to recruit qualified Native and non-Native students for summer internships and other seasonal employment. These positions and projects are designed to meet the students' educational goals and to contribute toward Division of Subsistence data needs. Consequently, these cooperative ventures provide benefits to all parties involved. Several former University of Alaska students, who gained experience with the Division prior to graduation, now are employed as subsistence resource specialists and fish and game technicians.

Local governments and Native organizations also have been contacted to assist in identifying qualified persons for positions in their regions. In this way, the Division has expanded the pool of candidates for a current vacancy in rural Alaska. Native field assistants, hired by federal land management agencies to assist Division of Subsistence staff with research projects, also were recruited through consultation with these local entities.

Through the concerted efforts of Division staff, modifications have been made in hiring procedures to permit greater flexibility in recruiting and hiring local and Native candidates. For example, the Division was able to have a bilingual preference attached to certain technician positions and to have subsistence experience count as relevant work experience. An entry level subsistence resource specialist classification also was created which does not necessitate a college degree, although some university course work is required.

Another strategy the Division of Subsistence has used successfully for involving local and Native residents in its research program is through cooperative projects with federal agencies. Two such projects in Interior Alaska, for example, involved a Division subsistence resource specialist supervising Native residents of the study communities, who were hired as research assistants by the National Park Service and the U. S. Fish and Wildlife Service. Three additional Interior Alaska subsistence studies involved the Division providing technical assistance to local residents or university students employed by the U.S. Fish and Wildlife Service. Not only do such cooperative efforts strengthen the working relationship of state and federal resource management agencies, but they also foster closer ties with the communities in which the studies are being conducted.

Not unexpectedly, however, Native and rural staff have experienced some problems in working for the Division and ADF&G. Residents of communities in which the Division conducts studies occasionally are suspicious of the research goals and objectives and may direct their concerns to the staff members involved in the project. Incidents involving arrests for violations of hunting and fishing regulations have made some rural residents fearful of giving out information about harvest levels, seasonality of harvest, and uses of fish and wildlife. Such circumstances create a difficult work environment for any researcher but especially so when a local resident is involved on the

study team. He or she may be perceived as having betrayed confidences or using poor judgment in selecting employment. In a few instances, local and Native staff have had to exercise care to ensure that their jobs do not conflict with other leadership and organizational responsibilities they have in the community.

These kinds of problems notwithstanding, someone who understands the local cultural and socioeconomic system and speaks the local language is in a far better position to develop cooperation and clear up potential misunderstandings that is the typical urban-based resource manager or wildlife researcher. Division of Subsistence staff normally have found local residents supportive of their study plans and eager to share information with persons committed to gaining an understanding of subsistence patterns and uses.

Local and Native hire efforts may be affected by declining oil revenues and resulting funding cuts in state programs. Since rural offices are very expensive to operate and maintain, and despite their importance to our program, rural operations may be scaled back. Reductions in personnel also may translate into less time being available to train and supervise new personnel who require careful guidance. On a more optimistic note, ADF&G has formed a cross-cultural task force whose goal is to develop strategies for improving communication with the public, particularly in rural cross-cultural settings. Such a program can benefit from the experiences of the Division of Subsistence and facilitate development of a closer working relationship between the managers and users of fish and wildlife resources in Alaska.

8.0 RECOMMENDATIONS

Employment in resource management agencies is one obvious route for Native and rural residents to participate in renewable resource management. Successful management programs, in fact, may require the active involvement of local residents whose skills and knowledge complement those of wildlife managers and researchers. On the basis of our observations and experiences with local and Native hire in the Alaska Department of Fish and Game, we can offer several recommendations for strengthening these efforts.

1. Training programs tailored to meet the needs of local communities should be expanded throughout Arctic and Subarctic North America. The Arctic College Renewable Resource Technology Program, described by Jack Van Camp at this Symposium, is an excellent example of a program with great potential.
2. Similarly, expansion of internship programs between universities and renewable resource management agencies should be further developed. The Division of Subsistence experience with college interns indicates that students can contribute positively to research programs, while developing the skills needed to become regular staff members of resource management agencies. However, for internships to be successful, the agency must be willing to invest the time required to train, supervise, and guide the student.
3. Close coordination between renewable resource management agencies and Native organizations can help to ensure that opportunities are available for training and employment of Native people.
4. Resource management agencies and other entities should be encouraged to substitute for formal training among Native and rural applicants, such skills as experience in harvesting renewable resources, traditional knowledge of the land

and its resources, and practical experience acquired through living outside urban areas.

5. Finally, we encourage a strengthening of communication between resource management agencies, researchers, and residents of rural communities in the North. This will enable us to evaluate the strategies used for local and Native hire, and to learn from those that were successful and unsuccessful. Resource management agencies in the United States and Canada operate in very different political climates and are guided by diverse rules and regulations. However, this should not detract from the fact that there are many similarities between the renewable resources, resource use patterns, and resource management issues in Canada and Alaska.

9.0 SUMMARY

Appropriate renewable resource management programs in the North must involve managers and researchers working in concert with local residents, communities, and organizations. This blending of scientific knowledge and practical experience, as we have been reminded of throughout this conference, is essential if programs are to succeed. The Alaska Department of Fish and Game, Division of Subsistence, owes much of its success in conducting subsistence research to the involvement of local and Native residents on its study teams. We recognize that there are both costs and benefits involved in such employment, to both the individual and our Division, but believe that the problems can be resolved. Not only will we continue pursuing this goal, but we also will work to expand the role played more generally by Native and rural Alaskans in resource management activities.

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SESSION V:

**ECONOMIC DEVELOPMENT THROUGH
RENEWABLE RESOURCES:**

CASE HISTORIES

KEYNOTE ADDRESS:

ECONOMIC DEVELOPMENT AND RENEWABLE RESOURCES IN THE NORTHWEST TERRITORIES

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***ABSTRACT:** This paper provides an overview of the importance of the renewable resource sector in the Northwest Territories both to the economy and to the culture and lifestyle of its people. The rationale for and nature of Territorial Government policies and programs in support of this sector is reviewed with an emphasis on the present governments short and long term goals for future development. The jurisdictional, economical and other constraints on this development as well as the need to reconcile scientific and traditional methods of resource management are described. In closing, future possibilities for new or expanded resource industries are considered.*

I am here to speak to you today about Renewable Resources and Economic Development in the Northwest Territories. Unlike other sectors of the economy, one cannot discuss the economic importance of renewable resources use without considering its cultural and social importance as well. This is particularly true of hunting and trapping but also, I think, relates to fishing and forestry. I intend to focus my talk on the economic aspects of the renewable resource sector but I wish to begin by looking at the social aspects.

In thinking of this, I cannot help but be reminded of my uncle, Ted Trindle, who was a very successful trapper in the Fort Simpson area. Like most trappers, he was on the "credit" system with the Hudson's Bay Company. He bought goods on credit through the year and paid them off with the furs he caught each winter. One year he became very ill with stomach problems and eventually had to come south for an operation. This was long before medicare and, because he wasn't a Treaty Indian, he had to pay the cost himself. To do so he had to sell his trapline and all his gear. When he finally returned to Fort Simpson he wanted to go trapping again but the Bay, knowing he had sold his trapline, wouldn't give him credit. Ted was determined; he could have taken the easy way out and found some other job, but he didn't. He went around town and gathered all the wire he could find and used it to catch fur. He went into the bush, without supplies, and set literally hundreds of snares. By Christmas he had gathered over a hundred pelts which he used to get re-established in the system. My uncle didn't undertake this hardship because he had no other options. He did it because trapping gave him pride and independence; a sense that he could support himself through his closeness to the lands.

This sense of pride and independence is still an important factor in understanding the renewable resource sector in the Northwest Territories. The relationship, or perhaps partnership would be a better word, that the people have with the land, goes a long way to explain the determination of northern people and of my Government to preserve, support and enhance these activities in the Northwest Territories. However, there are also sound economic reasons to encourage the development of renewable resource industries in the Northwest Territories. The recent drop in the price of oil and the longer-term decline in base metal prices are beginning to negatively affect our economy. In this context the

renewable resource sector becomes an important area for building a stable and diversified economic base.

In terms of exports, renewable resources at present amount to only \$6 million, less than 1% of the gross value of exports for the Northwest Territories. In real terms, however, when the domestic use of all renewable resources are counted in, this sector adds nearly \$50 million to the Territorial economy. Nearly 4,000 people earn their living, in whole or in part, from these activities and it is estimated that about one-third of the real income of Native people in the Northwest Territories is derived from this source. Tourism, which in the Northwest Territories is certainly directly related to renewable resources, adds another \$50 million to our economy and provides many jobs for northerners.

The harvesting of wildlife for food or fur remains the most important aspect of the renewable resource economy in the Northwest Territories. In the Eastern and High Arctic fish and wildlife are the only resources available and they must form a basis for the local economy. For this reason, my Government has been very concerned about the impact that the anti-seal campaign has had on our economy. In the three Inuit communities most affected, Pangnirtung, Broughton Island and Holman Island, the income from marketing seals fell from \$350,000 to only \$60,000 between 1982 and 1984. This has dramatically reduced the standard of living of many families and increased their dependence on government help. The social impact that this has had cannot begin to be measured.

Similar impacts, though not as yet as severe, are being felt by trappers in the Western Arctic. For many, the present campaign against the leg-hold trap has created uncertainty, if not downright discouragement, over the future of trapping in the North.

The effects of these campaigns are not simply the loss of cash income. The secondary effects on lifestyle and standard of living are far more dramatic. The sale of furs is how Native hunters finance their hunting. A modern hunting culture needs a cash input to support itself. An Inuit seal hunter, for example, needs at least \$10,000 a year in order to go seal hunting. The same equipment he uses in the commercial hunt is used to hunt species whose only value are for food and domestic use for clothing and other basic necessities. This is a continuation and adaptation of a lifestyle that has supported Native people in the North for thousands of years. This lifestyle and culture has now been seriously endangered by people who do not understand or appreciate its value.

I could list all the negative effects of the decline of the fur industry in great detail; the loss of nutritional food and the resultant increase in dependence on government assistance, the social malaise in communities and on and on. I would rather focus on the positive, for there is much to be positive about.

First of all, the wildlife resource of the Northwest Territories is immense and is thriving. This is due to many factors. The close relationship that Native people have to the land make the welfare of wildlife of great importance to them. This is reflected in the stringent environmental guarantees that they have insisted on from all mineral and hydrocarbon developments. In addition my Government has emphasized the need to maintain this resource through sound management principles. To a large measure we have succeeded and I would point to the return of the wood bison to the MacKenzie Valley, the growth of caribou herds across the North and the restoration of the muskox to Banks Island as only three examples of our success. The vast majority of fish and wildlife species in the North are thriving and where problems do exist, my government is actively seeking solutions. Given our record of success, there is every reason to be confident about the future of our renewable resource base.

Secondly, there is great determination among all Northerners to maintain this aspect of our economy. My Government is actively seeking to increase the domestic use of the wildlife resource through inter-settlement trade. As well we continue to support the activities of Native organizations to inform the public about their side of the fur question so that some of the damage done to this industry might be repaired. At the same time new ways of using the resource such as tanning and the manufacture of fur and leather goods are being explored.

Finally, it appears that the fur industry generally is making a comeback. Although the value of the fur harvest in the Northwest Territories has fallen steadily over the last seven years, from over \$6 million in 1978 to less than \$3 million in 1985, there are encouraging signs elsewhere in Canada. Between 1984 and 1985, the Canadian Fur Industry as a whole grew at the rate of 10%. This good news seems to say that the anti-fur lobbies can be overcome and that new markets can be developed for the industry. This, I think, bodes well for the Northern economy.

Although the wildlife harvest is presently the most important aspect of the renewable resource economy, it is certainly not the only one. Fishing, forestry and agriculture are also important to varying degrees though each of these tend to be confined to specific regions of the North. Like wildlife, these resources are more important because of their domestic use than due to their value as exports. The promotion of these sectors will further stabilize the Northern economy and reduce dependence on southern imports.

The commercial fishery in the NWT provides about 400 jobs and produces roughly \$1.5 million of fish each year. This industry has declined in recent years due to falling prices and high costs of production. The Whitefish industry on Great Slave Lake has been particularly hard hit and there is strong feeling among fishermen there that part of their problem stems from inadequate or improper marketing of their product by the Freshwater Fish Marketing Board. Be that as it may, the fishing industry is now heavily subsidized and it appears that perhaps the only viable commercial fisheries are those for Arctic Char at Cambridge Bay and Rankin Inlet. Nevertheless, fishing will remain important to the North both because of the employment it creates and because of the local, non-commercial value of the product. The development of a small-scale inter and intra settlement trade in fish may be a solution to the industry's long term survival.

Forestry has some potential for growth in the North. At present this sector produces roughly \$2 million worth of product each year. I often think, when I look at the huge quantity of paper that crosses my desk, that there must be potential for a pulp and paper industry in the North, even if only to supply government needs. However, for now at least, the main markets for our forest products are for local construction and for fuelwood.

In the last five years over 170 homes have been constructed from logs harvested in the Northwest Territories. As well my Government has encouraged the use of logs in the construction of community facilities such as garages and community halls. Not only has this lowered costs and produced esthetically pleasing northern facilities, it has also resulted in more jobs for Northerners.

Sawn wood for construction is produced at four sawmills in the South Mackenzie area. To date three of four mills have required on-going government assistance to remain in operation and further improvements in efficiency and in local markets will be needed if these mills are to become commercially viable.

Fuelwood by the cord is an important and growing commercial and domestic product in the Western Arctic. One study undertaken by my Government estimates that \$17.5 million could be saved annually and 1,000 full time jobs could be created with full conversion to wood from fossil fuels. While full conversion is not likely to occur, this does indicate the potential for growth in this sector.

One difficulty that has existed in the past with the development of our forest resources was the lack of control by territorial authorities over the resource. Jurisdiction for forestry is now being transferred to the Territorial Government and this will allow for the development of forest management policies that integrate environmental and economic development concerns. In doing so, we ensure that timber resources are utilized in the most efficient manner, while ensuring that negative impacts on other renewable resources are minimized.

Strange as it may seem, agriculture is a sector that has considerable potential for development in the North, at least in the South Mackenzie area. I recall some years ago being involved in a cooperative in my home town of Fort Simpson that grew and marketed potatoes. During our first year of production we not only produced all the potatoes needed in Fort Simpson, but were able to export over 15,000 pounds north to Inuvik. Similar small-scale projects are technically possible, but at present the industry is limited by the lack of a northern agricultural policy and a moratorium on agricultural development until after land claims are settled. Still, small-scale agricultural developments might be acceptable and allowed to proceed if they were community initiated, involved local Native northerners and were sensitive to other resource issues.

Over the long term the future of agriculture in the North is dependent on two factors: the development of suitable crops that could be grown in the North and the ability of government and industry to persuade Northerners to substitute northern grown products for well-advertised southern imports. The former task is, I suppose, one for biologists and agricultural experts, like yourselves, while the latter is one for politicians like me. Perhaps it is something we can work together on.

Government has played an important role in the development of the renewable resource sector. While harvesting the resource is clearly a matter of individual initiative and effort, Government must create the environment that will encourage and support these efforts. We will also ensure that the renewable resource sector is protected from damage due to development of other areas of the economy. These are the roles that the Territorial Government has played and will continue to play in the future. My Government has developed and implemented policies on renewable resource use and compensation that, on the one hand, encourage the domestic and commercial uses of renewable resources within defined resource management goals, and, on the other hand, require developers of resource development projects to determine possible impacts on renewable resources and prepare detailed compensation plans for the users of those resources before proceeding with development.

Further policy development will be designed to produce a strategic plan for renewable resource development and use in the NWT. Three main principles will guide the development of policy. First renewable resource development will result in an increase of community self-sufficiency in food and fibre. Second, renewable resource use will be managed under the principle of sustainable yields. Finally, renewable resources use will result in a maximization of community and territorial economic impacts so that the vast majority of benefits from this resource accrue to territorial residents.

At the same time the over-riding principle that must apply is that the use of renewable resources is not just important commercially, but also for its contribution to the domestic economy and for its social and cultural value. For these reasons, my Government has and will continue to provide subsidy support to forestry, fishing, trapping and other renewable resource uses.

The management of renewable resources in the North is and will be a complex process. Clearly to do the job effectively will require adequate scientific information and improved technical and management skills. All too often in the past, however, the traditional knowledge and skills of the users of the resource have been discounted and ignored in the management of the resource. I remember one instance where wildlife studies indicated that caribou herds were dramatically declining despite the claims of experienced Inuit hunters to the contrary.

Later studies, undertaken in part due to political pressure exerted by hunters, showed herds were not only healthy but growing rapidly. Cases like these have certainly created resentment among traditional users who not only have faith in their own knowledge, but also dislike outside interference with a resource they view as belonging to them. The settlement of land claims will include the establishment of land and resource management boards that have Native participation in all resource management decisions. The Inuvialuit Game Council has already been established in the Mackenzie River Delta and work has begun to establish management boards in other settlement areas. These will eventually be replaced by structures developed in the Dene/Metis and TFN claims.

As biologists you must be sensitive to these concerns. I have no doubt you have a great deal to contribute to the proper management and development of renewable resources in the Northwest Territories but, if you are to contribute, you must be sensitive to the concerns and knowledge of Native people. They must be involved not only in your investigations, but must also play a major role in the management decisions that are made because of them. To be effective, plans for the development and management of renewable resources must integrate the relevant knowledge and experience of both traditional users of the resource and the scientific community.

In closing, I want to assure you that the Government of the Northwest Territories is committed to the preservation and encouragement of the renewable resource sector. This includes not just the wildlife harvest but also fishing, forestry and, to a limited extent, agriculture. These activities provide both cash and subsistence support to many northerners and provide an important alternative to the wage economy. As well, the development of this sector will stabilize and diversify our economy thus providing a buffer to the boom and bust of the mining and petroleum industries.

More important to me, however, is the need to preserve a way of life that is deeply imbedded in our history and culture. For generations Dene, Metis, Inuit and many non-Native Northerners as well, have chosen to live close to the land. My Government is committed to enhancing that way of life both by supporting traditional uses of these resources and by helping develop new secondary industries using fur, leather, timber and other primary products.

RENEWABLE RESOURCES AND NATIVE ECONOMIC DEVELOPMENT IN THE LAC LA BICHE REGION

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***ABSTRACT:** This presentation will be made in the context of a regional community and its interaction, through its Regional Economic Development Council (REDC) in the field of economic development, and especially in regards to the Native community involvement in initiatives centered on economic opportunities in renewable resources. It will discuss the positive effects of regional support for these initiatives through the REDC and will highlight two projects of significance: the commercial fishery and wildlife ranching.*

The section on the commercial fishery, which is one of the basic economies of the region with much Native involvement, will show how it found itself in economic difficulties and with the REDC assistance in close-in management and the development of new products that broadened its market area and increased its volume, returned to a stable and viable position.

The next section will be about the development of a wildlife ranch on the Kikino Metis Settlement, a member community of the REDC, and how this community involved many organizations, including the REDC, to work towards developing a viable 'new' agricultural operation, using land not suitable for traditional agricultural purposes. It will also show that community and regional support has given this project credibility and made it a prototype for this type of specialized farming.

Finally, the paper will discuss not only the successes, but also the setbacks, in developing these ventures, and how, by working with the regional community through the REDC, they have assisted, not only to develop the Native economy, but the economy of the region as a whole.

1.0 INTRODUCTION

This paper will endeavour to show how Native communities and organizations located in the Lac La Biche region, as members of the locally funded and operated Regional Economic Development Council (REDC), have made positive use of this group to obtain strong local support for their economic enterprises and to access expertise that has assisted these projects towards economic viability.

Although the REDC has worked in some manner or another with many groups of various cultural backgrounds within the region on a variety of projects involving renewable resources, this particular paper will highlight two major ventures, which are extremely important, not only to the communities and people directly involved, but also to the overall welfare of the region and its citizens as well: the Lac La Biche Fishermen's Co-Op Ltd. and the Kikino Wildlife Ranching Association.

The REDC would like to make it clear that the reason for these organizations' success in their fields stem from the support, enthusiasm and management of the project by the staff and boards of each of these groups. The REDC and other support agencies only provide ideas and expertise that can assist these business ventures. It is the management and staff, and how they choose to use such support to operate their business that makes the difference between success and failure.

2.0 BACKGROUND - THE HISTORY OF THE REGIONAL ECONOMIC DEVELOPMENT COUNCIL AND ITS MANDATE AND OBJECTIVES

2.1 LAC LA BICHE REGION

The Town of Lac La Biche is located 140 miles northeast of Edmonton in the midst of Alberta's Lakeland. Seventy percent of Alberta's class one beaches lie in a 50 mile radius of this community. Lac La Biche itself, is one of Alberta's oldest communities. David Thompson of the North West Company constructed a fort (Red Deer House) in 1798, while Peter Pond followed for the Hudson's Bay Company with Greenwich House in 1799. The first wheat grown in Alberta was raised by the Roman Catholic Church at its Mission, which is located 7 miles west of the present townsite. Lac La Biche is located on an important watershed: the water from Beaver Lake situated just south of Town flows into the Nelson River system ending up in Hudson Bay, while Lac La Biche Lake itself flows north to the Arctic via the Athabasca River.

The Town of Lac La Biche has a natural and historic drawing area of approximately 40 - 45 miles in radius with an overall population of over 8,000 persons. The ethnic mix is rich and diverse, for besides both Cree and Chipewyan Indians and the Metis people, there are strong populations of French, Italian, Ukrainian, Lebanese and Scandinavians. There is also a settlement of "White Russians" or Old Believers who still wear parts of their traditional costumes for everyday dress. Cultural pride is strong, especially as shown by successful dancing groups, such as the Kikino Northern Lites Dancers, Ukrainian, French-Canadian and Lebanese dancers.

Originally, the economy centered around the fur trade, but with the construction of the railroad from Edmonton to Fort McMurray via Lac La Biche in 1915, logging, commercial fishery, and agriculture gained increasing importance. Currently, the economy is very diverse and has remained comparatively healthy over the recent recession, and we hope that it will continue as we face the possibility of another one. The present economy is based on agriculture, the forest industry, heavy oil and natural gas, tourism, commercial fishery, transportation, government services and post secondary education (Alberta Vocational Centre). However, in spite of this, unemployment levels are relatively high, especially in the Native communities.

2.2 REGIONAL ECONOMIC DEVELOPMENT COUNCIL

The Regional Economic Development Council was founded in 1974 in response to pressures that were having negative effects on the economy of the Lac La Biche region. Firstly, Syncrude was under construction in Fort McMurray, 180 miles to the north, drawing people away from our region. In addition, there was a definite trend towards economic depression and depopulation in rural Alberta as a whole that was giving problems to many small communities in the Province. The Town of Lac La Biche and the Lac La Biche Chamber of Commerce became very concerned about this trend and reactivated its Industrial Development Committee. It soon realized that the necessary work could not be accomplished by volunteers, and that the problem was not just a town problem, but a

regional one. To this end, discussions took place with all the communities in the region, including the Metis Settlements, Indian Reserves and the Improvement District, and an agreement was reached that the REDC should be formed. Native involvement was strong in the making of this decision.

Present funding members of the REDC are as follows:

Beaver Lake Indian Reserve
Caslan Metis Settlement
Heart Lake Indian Reserve
Improvement District #18 (South)
Kikino Metis Settlement
Lac La Biche Chamber of Commerce
Lakeland Native Women's Association/Metis Association of Alberta
Town of Lac La Biche
Village of Plamondon

The REDC also has two new corporate members with interests in the region:

Alberta Energy Company
TransAlta Utilities

The Council receives an operations grant from Alberta Economic Development on an annual basis, which is presently around 30% of the overall annual budget of over \$106,000.

Each member community and organization appoints a delegate and an alternate delegate to the Council, while the hamlets situated in the Improvement District have associate membership status for their delegates who are able to vote on all items except those concerning the budget and bylaws. The Council is traditionally chaired by a member-at-large, who is chosen by the group as having excellent management and interpersonal skills and viewed by the area as being unbiased to any one community in the region. Presently, there are three staff members, the Director, an Administrative Assistant, and a Secretary/Receptionist.

The primary objective of the REDC is to expand and maximize the economy of the area in a planned manner for the benefit of the people of the region by:

1. Encouraging industry and business to develop within the region.
2. Encouraging industry and business to come into the region from 'outside'.
3. Promoting the development of infrastructure that will help business and industry to locate and expand.
4. Promoting and researching maximum use of the region's natural resources.
5. Providing access to both private and public sector financial and business agencies to the people of the region.
6. Promoting the region through:
 - Personal contact
 - Brochures
 - Slide projection shows

- Trade shows
 - Newspaper releases and ads, etc.
7. Establishing a statistical library to be available to those planning to locate businesses and/or industry in the area.
 8. Providing a contact point re: economic development for the membership, the people of the region, businesses, and all levels of government.
 9. Providing consulting services to businesses wishing to start up or expand, or who are experiencing trouble.
 10. Providing information services to business, government, and people, regarding business location, etc.
 11. Providing close in-management services on an intermediate basis to one or two community owned businesses, that lack expertise to manage their own affairs, and whose business is vitally important to be maintained in the region.

Note: The REDC is sometimes a prime mover in projects, at other times, a partner with other groups and agencies, and yet at other times, a minor player in a supporting role.

Over its 12 years of operation, the REDC has met many of its objectives and has gained a reputation as an organization that has the full support and input of its membership and has gained overall credibility, both inside and outside the region, for assisting and accomplishing the objectives of its membership and the people of the region (Currie et al. 1984).

2.3 ECONOMIC DEVELOPMENT PROJECTS WITH NATIVE INVOLVEMENT AND REDC INPUT IN THE LAC LA BICHE REGION

The REDC, with guidance from its diverse membership, has always believed and supported the idea that the renewable resources of the region, although they can be used wisely for the economic benefit of the people of the region, must never be over-exploited or destroyed in the rush to develop non-renewable resources, or by developing activities not suitable to the terrain and detrimental to habitat. This is especially important to our Native membership, whose roots are in this country and whose respect for nature and wildlife is part of their spiritual beliefs. A recent example of this is in a decision made by the REDC to recommend to the Minister of Transportation against a route alignment of a very important new all-weather road north from Lac La Biche to Conklin and Fort McMurray that would have passed through land that our member community, the Heart Lake Indian Band, felt should be left untouched because of its moose population and members' traplines, and because of the environmental damage such a road could cause. The route recommended by the REDC and accepted by the Minister of Transportation avoided this area and runs through areas acceptable to the Heart Lake Band.

Over the years, the REDC has become involved with a variety of projects, many of them with the involvement of the Native population and communities of the region, which center on use of the local renewable resources. Some of these that come to mind are:

1. The initial development of the Northern Alberta Wild Rice Growers' Association, now renamed the Alberta Wild Rice Growers' Association, which developed from a request for information at a regular REDC meeting, that was

met with such enthusiasm, that, with the assistance of Alberta Agriculture, an association of interested persons was formed that is now spearheading this new industry for Alberta.

2. Development of uses for poplar/aspen hardwoods. At this time several ideas are starting to look promising.
3. Lobbying for enhancement of walleye (pickerel) stocks, so important for the local tourism industry, that resulted in the establishment of walleye enhancement ponds.
4. Working with the people of Caslan Hamlet and the Caslan Metis Settlement to protect the Caslan/North Buck Lake Sandhill area from depredation, and to rationalize the various uses of this heavily used tourist area.
5. Publication of "Tourism - Lac La Biche Country", which identifies the tourism potential, but also the need for protecting the resources in order that the region can maintain its attractiveness and its heritage.

However, in this paper I would like to concentrate on two previously mentioned, very different, but very important Native-managed renewable resource enterprises that have their roots in the traditional Native way of life, and are currently meeting with some success; the Lac La Biche Fishermen's Co-Op Ltd. and the Kikino Wildlife Ranching Association.

3.0 LAC LA BICHE FISHERMEN'S CO-OP LTD.

3.1 BACKGROUND TO THE FISHERY

The inland commercial fishery was one of the major economic bases of the Lac La Biche region in the early part of this century. By the 1950's, a major part of the fishery supplied the local mink ranching industry with mink feed. However, in the late 1960's, the mink ranching industry declined rapidly, reducing the requirement for tullibee for feed.

In 1969, the small independent fish packing companies, who were located all over Western Canada, were replaced by the Crown Corporation, the Freshwater Fish Marketing Corporation, with its headquarters in Winnipeg, Manitoba. The industry was so tightly controlled by the American buyers in the North East and Central United States that both fishermen and packers were having a very hard time of making a go at it (McIvor Commission Report 1967). At that time, the local commercial fishermen formed a co-operative as an agent of the Freshwater Fish Marketing Corporation (F. F. M. C.) to pack and ship fish for an agency fee set by F. F. M. C. None of the old independent packing plants met Federal Fisheries & Oceans inspection standards, and so a new plant was constructed in 1976. This plant was built with the assistance of Canada/Alberta Nutritive Food Processing funds.

Presently, Lac La Biche is the center of Commercial Fishery Zone D. Production in this Zone ranges as high as about 3/4 million pounds of fish, of which less than half is shipped to F. F. M. C. through the Lac La Biche Fishermen's Co-Op Ltd. The remaining production is, either tullibee sold as mink feed to the few remaining mink ranchers, or sold to individual end users. This latter market is centered in the Vegreville, Smoky Lake, Andrew area, and is especially lucrative just prior to the Christmas season.

The major producing lake is Lac La Biche Lake itself (commercial quotas--whitefish, 182,000 kg; pike, 34,000 kg; tullibee, 771,000 kg). However another 16 lakes are fished too. Production starts after ice break-up on Beaver Lake and Lac La Biche, halts over the heat of summer to avoid spoilage, and commences again in September, through to freeze up. After freeze up, Lac La Biche Lake is opened again for the majority of the winter, when fish prices are at their best.

The majority of commercial fishermen are of Native origin. However, there are quite a few producers of other ethnic origins, too. The Board of Directors of the Lac La Biche Fishermen's Co-Op Ltd. is equally split between Metis and people whose roots reach back to Italy, Lebanon and the Ukraine; the management and staff are all Metis.

3.2 R.E.D.C. INVOLVEMENT WITH THE FISHERMEN'S CO-OP

The R.E.D.C. was initially requested by the Lac La Biche Fishermen's Co-Op Ltd. to assist the Co-Op to put together funding for its new packing shed in 1974. However, long term, ongoing assistance was not requested until 1978. At that time, the Co-Op found itself with an operating deficit of some \$28,000. At the same time, the author of this paper had been hired as the new Director of the R.E.D.C. The Co-Op Board of Directors was aware that I had been involved with Native run commercial fishery enterprises and co-operatives, both in the Northwest Territories and in Manitoba, and directly requested my in-depth assistance to bring the Co-Op, which is the backbone of the local fishery industry, back into a viable position. The R.E.D.C. was very willing to assist, as it felt, and still feels, that the commercial fishery is a very important part of the regional economy, makes good, balanced use of a local renewable resource, and provides employment, on a seasonal basis, to, at times, about 100 persons, who are mainly of Native origin. The R.E.D.C. therefore came to a verbal agreement with the Fishermen's Co-Op that it would provide close-in management services to the organization until such time as it felt that it could manage its own affairs without such assistance.

During the time that the R.E.D.C. has worked with the Fishermen's Co-Op, it has never made actual decisions on behalf of that company. It has provided advice, discussed options and given its opinion, but in the end, the responsibility and decisions which brought the Co-Op back into viability were all made by the Board of Directors, management and membership of the Co-Op.

Initially the R.E.D.C., working with the Board of Directors, made an assessment of the Co-Op's operation. Financial statements were reviewed, and day to day operations monitored. All Co-Op correspondence was channelled through the R.E.D.C., so that the Council could be very conversant with the operation on a day to day basis.

By the end of 1978, the Board reviewed their financial picture with the R.E.D.C. and found the following:

1. That revenue from the F.F.M.C. agency fee of 8 1/2 cents per pound was being exceeded by expenditures of around 10 cents per pound. (In dealing with financial decisions, it was found useful to break figures down to the lowest common denominator.)
2. That the reason for the first finding centered on:
 - (a) High wage costs.
 - (b) Shipping less fish out to F.F.M.C. than was purchased.
 - (c) High insurance costs.

- (d) Lack of control of fish tubs (property of F.F.M.C.).
- (e) High cost of maintenance of the ice machine.
- (f) Accounts receivable were out of control.
- (g) Volumes of production were reducing.

Analysing these results the Board made some tough decisions:

1. Management was replaced and paid on a per pound basis.
2. A stiff control system for shrinkage was set up.
3. New insurance coverage was negotiated with the assistance of the Freshwater Fish Marketing Corporation.
4. The Board of Directors personally searched the region for F. F. M. C. fish tubs, retrieved them and put into effect a policy that disallowed the use of these tubs by individual fishermen on the lakes.
5. The Board negotiated with F. F. M. C. re: the purchase cost and interest rates on the ice machine which had been purchased secondhand from the Corporation.
6. The Board discontinued any purchases through the Co-Op on credit.
7. New management was instructed to enforce strict quality control to prevent chargebacks for poor quality fish received by F. F. M. C.

In addition the Co-Op decided to levy an extra 1 cent per pound from the fishermen delivering to the plant in the form of a non-interest bearing member loan, redeemable by the individual fishermen on retirement from the industry, and to levy a further 1 cent per pound on the first 200,000 lbs. of production in the spring fishery of 1979. The additional levy was not a member loan, but a direct donation by the fishermen to ensure the recovery of the plant operation.

R.E.D.C. involvement at this time was:

1. Routing and monitoring of all mail.
2. Providing day to day advice to Board and management.
3. Helping to arrange and attending all Board meetings.
4. Acting as liaison between the Co-Op and all relevant agencies: Freshwater Fish Marketing Corporation, Alberta Fish & Wildlife, Fisheries & Oceans, Co-Op Branch, the bank and suppliers, etc.
5. Providing assistance in finding bookkeeper service.
6. Providing assistance in finding an auditor.
7. Providing secretarial and administrative services on a day to day basis.

8. Assisting the Co-Op to prepare and present its lake opening proposals at the semi-annual Commercial Fishery Zone Meetings held with Alberta Fish & Wildlife.

By 1980, Lac La Biche Fishermen's Co-Operative had found its feet, was making a modest net margin, had retired the majority of its debt, had increased its production volumes, and was well on its way to establishing itself as a provincial leader in packing procedures and quality control, and this trend has continued to the present date. In spite of hard decisions that had to be made by the Board to reach this status, the membership has continued to support the organization.

As the years have gone by, the R.E.D.C., as its mandate requires, has gradually withdrawn its services to the Co-Op, on a mutually agreed basis. At this date, R.E.D.C. involvement has reduced to providing a contact point for the Board and management if any major problem arises, providing liaison with government and other agencies, and attending the majority of Board meetings.

3.3 FISH CO-OP PRODUCT DEVELOPMENT

In 1978 and 1979, as the Fish Co-Op Board of Directors and the R.E.D.C. discussed methods of increasing the Co-Op's production volume to assist the packing plant toward viability, the Co-Op Board authorized myself to investigate the possibility of developing new products to augment the packing operation. I made contact with the Freshwater Institute, a branch of Federal Fisheries & Oceans, located in Winnipeg, Manitoba, and discussed the situation with Mr. Dave Iredale of their Fisheries Development section. Mr. Iredale informed me that the Freshwater Institute was presently experimenting with the development of a caviar made from whitefish roe and advised that plants in Manitoba (Wabowden) and Saskatchewan (Diefenbaker Lake) were preparing to harvest roe and manufacture caviar experimentally that fall, and that there was a possibility of adding a plant in Alberta to their experiment. I took this information to the Co-Op Board who requested that the Lac La Biche plant be allowed to partake in this experimental production. This labour intensive operation became an instant success for the Zone D fishermen and the Lac La Biche Co-Op, and after resolving some of the problems encountered in the first year's experimental production, the Freshwater Fish Marketing Corporation took over the marketing and required volumes have been increasing annually. The product, known as "Golden Caviar", is increasing in popularity on the market annually. The plant manager's wife has been trained to supervise the operation, and she in turn has trained several women to work under her during the production season, in the month of October. Financial returns to both the plant and the fishermen have been excellent, at about \$1.50 per pound. However, the Board and membership have wisely remained conservative in production in this region in order to conserve the resource. As the new Alberta Commercial Fishery Licensing System takes effect, it will allow more flexibility to this specialized fishery and give the fishermen option to more lakes without damaging the fishery. But this is still some time in the future, at this date.

Once again, the Co-Op Board obtained assistance from the R.E.D.C. to assist in setting up the initial roe harvesting project and to coordinate caviar production with Fisheries & Oceans and the Freshwater Fish Marketing Corporation. The product has won gold medals at two World Culinary Olympics in recent years, which has given both the product and the local fishermen a boost.

Not so successful was the Co-Op's attempt to produce liquid pig food supplement, manufactured from fish offal which normally has to be hauled away to the garbage dump. After the success with the Golden Caviar, the Co-Op, R.E.D.C. and Fisheries & Oceans

hoped to follow it up with an experiment that would see fish offal ground, mixed with formic and propionic acid to obtain pH balance and reduced to liquid in a heated digestion tank. All equipment was supplied by Fisheries & Oceans, while Alberta Agriculture and the University of Alberta provided additional expertise. The actual product turned out to be an excellent supplement with equivalent protein value and better quality than soya bean supplement. However, owing to a variety of factors, including the fact that liquid supplements, although popular in Europe, have not found favour with farmers in North America yet, lack of potential volumes of production from the Lac La Biche plant, and problems with finding equipment with which to deliver the supplement to the pigs, the product never got out of the experimental stage and eventually started to inflate the costs of the Co-Op packing operation, which forced the Board to make the decision to close this experiment down.

3.4 REGIONAL COOPERATION WITH COMMERCIAL FISHERY PROBLEMS

The inland commercial fishery in Alberta faces many problems, several of which are due to the fact that in the overall economic picture of this province, it is a very minor industry and is often felt by the tourist and recreational fishery industry to be in direct conflict with themselves. These latter groups have strong lobbies which the commercial fishery lacks at this time. In actual fact both recreational and commercial fisheries, with some adjustments, can be run in harmony with each other, but there is a real need for education of the general public in order for this to happen.

The Regional Economic Development Council believes that the commercial fishery is an important sector of the Lac La Biche region's economy and has worked closely with the Lac La Biche Fishermen's Co-Op Ltd. in lobbying governments and delivering the message concerning the fishery to the general public. In so doing, it has often been able to attract support for the commercial fishery from such diverse groups as the various member communities and organizations of its own Council and the Lac La Biche Fish & Game Association on important issues such as environmental problems, pickerel enhancement, commercial fishery lake limits and tolerance quotas, and licensing policies, etc. The R.E.D.C. has assisted in putting presentations together for the Co-Op and has prepared its own support papers to such diverse groups as:

Alberta Select Legislative Committee on Fisheries (1979)
Northern Alberta Development Council
Alberta Task Force on Commercial Fisheries (1983)
Federal Senate Committee on Fisheries (1985)

and presently is in the process of inviting the Minister of Forestry to Lac La Biche to discuss some current problems.

Some successes have emanated from these presentations and the ongoing discussions:

1. The Lac La Biche Fishermen's Co-Op and the R.E.D.C. pioneered the idea of walleye enhancement ponds for Alberta, resulting in programs at Lac La Biche, Plamondon, and the proposals for other lakes in the region.
2. They, along with other groups, made suggestions that have resulted in Provincial initiatives to improve the fish marketing system.
3. They submitted proposals that, with suggestions from other areas, have resulted in a new, improved licensing system.

However, there are still many concerns out there, including: fair allocations of the resource between user groups, the need for elimination of the slow but steady reduction of commercial fishery lakes, the requirement that regulations presently enforced by the Federal government be regulated by the Province to give the fishery more flexibility and better resource management, and public attitude towards this fishery. The Fishermen's Co-Op and the R.E.D.C. continue to cooperate on these issues and many more that both groups hope will allow for the continuation of a better fishery that in turn will continue to create employment and enhance the local economy for many years to come.

4.0 KIKINO WILDLIFE RANCHING ASSOCIATION

4.1 BACKGROUND

The Kikino Metis Settlement, with a population of close to 700 people, is one of the founding, funding members of the Regional Economic Development Council. Kikino has always been an active member of the REDC and two of their delegates, including their present one, have acted in the capacity of Vice Chairman.

In the mid-1970's, interest grew in the development of wildlife ranching on the settlement. Much of the land on the settlement is not suitable for regular agricultural practices and it was felt that bison had been an important part of the Metis culture in the past. It was also felt that a successful wildlife ranching development could be very important to the economic development of the community and the employment of its people. In 1979, settlers began to take definite steps towards the founding of such a ranch, which has always had the firm support of the Settlement Council.

A point form synopsis of the development of the ranch follows:

- 1979 Kikino Wildlife Ranching Association formed into a legal entity.
- 1980 Construction of rudimentary, initial corral system, 20 acre holding pen and clearing of land.
- 1981 Obtained 24 bison (19 females and 5 males) through Fish & Wildlife Division from Elk Island National Park.
- 1981 Formation of Advisory Committee to the Wildlife Association comprised of representation from:
 - Fish & Wildlife Division
 - Alberta Agriculture
 - Metis Development Branch
 - Department of Animal Science, University of Alberta
 - Canada Agriculture
 - Regional Economic Development Council
 - Kikino Wildlife Ranching Association
- 1982 Fenced 11 1/2 sections of land. Received through Fish & Wildlife, 24 elk (1982/83). Constructed line cabin and horse barn.

- 1983 Purchased 21 bison from Alberta Wildlife Park (Municipal Debt Reduction Money). Constructed additional corrals to improve handling, separating and working on individual animals.
- 1984 Received another 21 bison from Elk Island National Park. Grant approved by Northern Alberta Development Council for \$9,500 for clearing of pasture (1,000 acres). Cut and peeled 8,000 posts for repair of fence and additional fencing.
- 1985 LEAD Planning Phase for development of management, production and marketing plan (\$43,000).
- 1985 LEAD Infrastructure Development (\$350,000). In this program sophisticated
 - /86 pasture and corral systems and handling equipment were purchased and developed. 50 acres of pasture were cleared.

Present herd levels are:

<u>Bison</u>		<u>Elk</u>	
45	mature cows	8	mature bulls
5	mature bulls	9	yearlings
11	sub-adult males	14	mature cows
<u>13</u>	calves	<u>9</u>	calves
74		40	

Presently the Ranching Association is attempting to build its herd up by the purchase of a further 25 bison cows and 15 elk cows, in order to bring the operation to viability within the next couple of years, rather than waiting for natural reproduction which would delay viability until about 7 years from now.

4.2 REDC INVOLVEMENT

Regional Economic Development Council involvement has been conducted on a very different basis with the Kikino Wildlife Ranching Association (of whom all the population of Kikino are members) than with the Lac La Biche Fishermen's Co-Op Ltd. It has been the ongoing stated basis to the development of the Wildlife Ranch that this operation very much belongs to the Kikino Settlement and the Board of the Association wants to remain very much in control. The Kikino Wildlife Ranching Association has therefore always been firmly at the helm of its own development, but has judiciously used agencies and organizations that are able to assist them as the need for their expertise arises. The Association has requested that these agencies form an Advisory Committee which meets regularly with the Board to discuss and review avenues of approach for bringing the ranch closer to viability.

In so doing, the Association had developed the ranch in a well organized and effective manner that has made it a prototype for this 'new' agricultural operation. Kikino is the first group to try to develop a viable wildlife ranch on marginal lands that cannot be used for regular agricultural purposes. At the present time, bison are considered agricultural animals under the Alberta Wildlife Act, but to date, elk are not, and can only be sold for breeding stock.

Regional Economic Development Council assistance has been ongoing on an ad hoc basis, as requested by the Board and management, and often as not is coordinated with other assisting agencies. Initially, it assisted the group to form a legal entity in 1979. At this time, there was certain resistance from some parts of government regarding the ranch. However, Alberta Agriculture and Alberta Fish & Wildlife were always supportive. In spite of this resistance, the Association never became disheartened and, along with Settlement Council, continued to prepare for the eventual day that they believed they would obtain animals. They systematically used many of the Canada Employment and similar kind of grants to cut poles, treat them, and erect fenceline and corrals. The REDC assisted with many of these applications.

Finally, in 1981, the first bison were received and from then on the ranch has developed a space. The REDC arranged for the Assistant Deputy Minister of Fish & Wildlife to tour the Kikino ranch in 1982. He was very impressed, and shortly after, 24 elk were received through the Province. In 1984 and 1985, the REDC has assisted the Association in preparation of its successful application for LEAD Planning and Infrastructure grants through Canada Employment & Immigration. Much of the technical assistance has come from the Department of Animal Science of the University of Alberta, Alberta Fish & Wildlife, Alberta Agriculture, and more recently Canada Agriculture. The strength of the operation, however, remains with the Board, management and staff, who have gained much expertise over the years and are probably now some of the leading experts in practical handling of bison and elk in the context of large semi-wild fenced areas, in Canada.

The Regional Economic Development Council sees the Kikino experiment, as extremely important, not only to Kikino itself, but to the overall development of the region, and is proud to have been some small part in assisting it to happen.

5.0 SUMMARY

This paper has reviewed two very important developments in the Lac La Biche region where Native people are using renewable resources for economic development in a wise and resourceful manner. These two projects are very different in some ways, as is the REDC involvement with them. The fishery industry is long established in the region and is part of the established economic base, but with a future that, because of the conflict between user groups and the increasing use of the fish stocks by the recreational fishery, does not look too promising at times. REDC involvement has been, at times, a part of the management, in order to bring the Fishermen's Co-Op packing plant into viability and to assist in approaching various levels of government to ensure that the commercial fishery 'get a fair shake' in regards to allocation of the resource and with government regulations. With the Kikino Wildlife Ranching Association, we see a brand new type of agriculture, which would appear to have a lot of future, with the excellent demand for buffalo meat which is developing in North America and Europe. Here the REDC has taken a far lower profile and only reacts to the requests of its member community. It has assisted in accessing necessary funding and expertise necessary in the trial and error of starting a new industry. However, both operations are important parts of the Native economy of the Lac La Biche region, and because of this, important to the region as a whole.

Perhaps the success of the REDC is that it brings people of many ethnic origins together in the region to search for economic betterment and as with the two operations reviewed, it puts the whole weight of the support of the regional community behind the economic priorities of its individual members. The slogan of the Regional Economic Development Council is that any economic success attained by any one of its members is

important to the region as a whole. With this type of philosophy, where people of different races and ethnic origins work together for mutual benefit, success is only a 'stones throw away'.

6.0 LITERATURE CITED

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THE INUVIALUIT LAND CLAIM SETTLEMENT

Bob Delure
Private Consultant
Burns Lake, British Columbia

Today I am facing the same problem as a lot of speakers--there is so much to talk and it's hard to know what to leave out. But, I'll try to be brief and leave time for some discussion, since my observation of this Symposium is that there are many critical issues that are not being discussed. And I don't know if it's because people are being polite, but I have worked on these issues for some 12 years and this is the first time I seen such a quiet audience.

The basic theme of my presentation is native participation in renewable resource management and native use of renewable resources in the northwestern portion of the Northwest Territories. These issues are different in the Northwest Territories than in the rest of the country in that they are the same thing. We are talking about wildlife management and of native people's use of wildlife. We have heard some speakers talk about co-management and indeed co-management was featured largely in the resolution for the settlement of the Inuvialuit land claim in 1984. I will caution you that the Inuvialuit land settlement model may not necessarily apply to other areas. The key thing in this settlement was that it was a negotiated one. And the message that I want to deliver to you here is that the negotiating process can be adapted to the specific needs of people in particular regions.

In this session, Case Histories of Renewable Resources and Economic Development, I will describe very briefly where we are at, but I cannot deliver to you a finished product. Following the settlement of the Inuvialuit land claim in 1984, we sat down and determined that we had to develop an economic strategy for the western Arctic. Parts of the land settlement involved cash, renewable resources and land and we said one of the things we had to do is work out a management plan. And it was key in that plan that the renewable resources form a portion of that overall economic strategy.

The history of the western arctic for at least the last 100 years has been a boom and bust cycle. We had three economies that I would characterize (and I am not an economist so I feel fairly free to use these terms) a renewable resource economy which has traditionally been a subsistence economy, an oil and gas economy which has been mainly exploration in the Beaufort Sea and on land, and a government economy. And we decided that development of the renewable resources in our region was the key to our economic development.

For those of you who are not familiar with the region, I would now like to briefly describe our unique situation. The area of Canada for which the settlement applies is in the northwestern portion of Canada. It circles the Beaufort Sea and includes two Territories, the Yukon Territory and the Northwest Territories. We have six communities which are all in the vicinity of the Beaufort Sea and all but one of these communities are located where there was traditional renewable resource harvesting -- the single most important purpose for their location.

The wildlife we have is both of international and national significance. We have the polar bear, the Porcupine caribou herd, marine resources like the bow head and beluga whales, and the migratory birds -- all of which are international resources. We have other

caribou herds, other wildlife populations and a number of fish populations. However, compared to the rest of Canada, the productivity is extremely low. What we commonly see in the arctic is what appears to be an abundance of wildlife since the wildlife concentrates in ecological hot spots. And indeed many of the native harvest areas are located around such sites.

So we have a large space, 360,000 km² and roughly 4,000 people of which 8,000 are harvesters. Now, we face a fairly unique problem in terms of embarking on developing the renewable resource because we do have an established subsistence requirement on the populations. And we do not have a lot of the management information that we would like to have in order to embark on additional exploitation of the resource. What we did find when we did a quick evaluation of the resources was that we did not have in any one community sufficient renewable resources upon which to base a community economy. So that put us in a situation of having to follow a number of strategies. One was we had to integrate the various communities in terms of their harvesting activities and renewable resource activities. In short, we had to provide safeguards for the boom and bust phenomena of arctic populations. We did not want to create any kind of economic development of the renewable resources which would not respond to the fluctuations of the populations. And the easiest way to do this is to have a substitute.

Going back to some of the concepts of co-management, we looked at problems in terms of developing the resource and then we looked at who the actors were. And it has been mentioned that there is an Inuvialuit Land Game Council which is a structure under the final agreement. (If time permits, I would like to come back to and talk about some of the topics discussed yesterday.) The Council sponsored this research project, a three year project, and set up a Board of Directors, half of whom are from the Government of the NWT. The representatives of the NWT Government are divided between two agencies which are responsible in some way for these activities; one being the Department of Renewable Resources who have a vital role in the management of the resource and the other being the Department of Economic Development.

One of the major problems in developing renewable resources is the government bureaucracy itself, and we had hope in terms of setting up this Board that some of that would be stream-lined. We are now one year into that project and if this conference had happened a couple of years from now we would probably have had some good case studies for you. We set fairly definite economic criteria at the outset in that we had a three year project. What we have to do in terms of achieving that strategy of integration is to develop enough cash flow in the western Arctic to support a minimum of overhead. And we set an objective of developing between 2 and 4 million dollars worth of cash income. That was our objective and that was in order to support what we saw as a minimum amount of central overhead which is about \$200,000. After one year of activity, we are about two thirds of the way there.

Of course we picked the easy ones to start in terms of the development but our objective is to develop an economically viable enterprises that are self sustaining. One of the areas that we have developed, the guided hunting of polar bear, muskoxen and caribou, has had the feature of fairly low overhead and extremely high returns to the communities. And as I was saying, all but one of the communities' locations were based initially on a renewable resource centre of harvesting activities. However, the economy being what it is, and we are all seeing various features of that, our objective was to get as much cash flow into those communities as possible. We are not in a situation of 100 years ago where a community was relatively mobile. They are now in one place and people are there. And part of our job, and this is a given, is to try and develop activities for those communities.

So this particular guiding activity heavily involved two out of our six communities and a third to a certain extent, so we achieved only part of our objective.

The next area that we started developing was somewhat similar to the bison project (discussed earlier by David McArthur) but for the muskoxen. What we found was that on one of our islands there was indeed a very healthy population of muskox which were causing management concerns in terms of competition with caribou. Here was a harvestable resource of considerable size which we had been working on for several years to develop as a commercial harvest of meat and we added to that the by-products in terms of making that a very efficient economic resource. I would say that our schedule of three years is a tight schedule and I think we will probably meet it. But at the end of that three year term, we will have a core group of renewable resource activities which will be the basis upon which further renewable resource management can take place.

The other feature which I just touched on was one of developing the Board of Directors for the Inuvialuit Settlement and including managers and economics people from both the Government and our group on this Board. What is essential for the Board, is that as economic development of renewable resources actually takes place, the Board starts doing things. We feel it is absolutely essential that research be carried out in conjunction with those activities so we are never in a situation where we cannot make a management decision where the renewable resource subsistence harvesting is potentially threatened. This is the number one priority and the economic aspects take a second priority.

Now, the Inuvialuit renewable resource project came after the settlement of a lot of the issues of co-management and I would like to go back and touch on a few fairly important features which may be of some assistance to those of you who may be embarking a similar project. In this respect, I have been one of the very fortunate people to have worked as a biologist with native organizations in trying to accomplish these objectives, and I think from these experiences, I might be able to give you some insights which might be helpful. When I first started work in 1974, my basic job was trying to work out the major conflicts which were developing at that time between oil and gas exploration and the hunters. So very quickly I got into a situation where management became a key issue and I had to deal with these issues in terms of the hunters and trappers.

The situation 10 years ago in the Territories is not the same situation we have today. But it may be the same as you have in some of the provinces and perhaps I can explain some of my observations.

Peter Usher mentioned there were 2 management models; he mentioned the government model which starts with a premise of collective or government ownership of wildlife. My view of this particular observation is slightly different, and I am directing this at the biologists here. And that is that I termed it a provincial model because that is what I was familiar with at that time when I went to the Territories. But the Territories had exactly the same model as the provinces and that model was based on three or four components; the first one being research, the second being management decisions, the third being policy decisions, and the last being legislation. In particular, one aspect that struck me as being terribly absurd in the Territories, and it may apply to some of the provinces, is that we try to manage renewable resources based on legislation. This is a totally crazy concept as far as I can see. Certainly it does not apply in the Territories and I think the concept of co-management is recognition of the fact that we cannot legislate good management.

Now, biologists play a very important role in that model and it comes down to their professionalism and their professional ethic. And I speak the way I did about economics, I am not an economist. I now speak of managers and I am not a manager -- I am a research

scientist. So I am coming from the outside. Now, what was incredible when you looked at the people employed by the NWT who were trying to manage -- and most of them were biologists -- was that they were armed with a very incomplete jurisdiction. They were armed with basically very little information and the biological theory which they had, just did not apply. Managers basically work by rules of thumb, which may apply in some places and are probably based on good common sense, but they are not defensible in any critical situation.

When we started the Inuvialuit land claims work in terms of the analysis of these issues, we looked at the jurisdiction issue very carefully and in the NWT, we have a number of jurisdictions. Within our own settlement, we have several jurisdictions which cause division or compartmentalization of the management issue:

1. The NWT has jurisdiction for big and small game;
2. The Yukon has a similar jurisdiction just across the border (which is also part of the area which these people use); and
3. The federal government has jurisdiction for the migratory birds and fisheries.

Now when you look at wildlife management from our standpoint, all a wildlife manager can do is to manage the people. He cannot manage the productivity because that jurisdiction rested with the Department of Indian and Northern Affairs and Northern Development, the NWT Game Branch or the Yukon Wildlife Branch. These agencies had the one half of wildlife management which was most critical. You look at the policy of Indian Affairs and then you look at the policy of wildlife management and they are in conflict.

So a fundamental part of the settlement of this land claim was to turn that around and this is one feature that is very important for people to understand if they look at our model. We did integrate a great deal of the management function jurisdictions but we did not necessarily take away other people's jurisdictions. But we were able to integrate them. We removed the legislative capability of governments to deal with things other than conservation. Part of the model of legislation that Peter Usher was talking about is that we try to legislate absolutely everything. That is a mistake because what I saw developing in the Territories is what I saw already in the provinces and that is the biologists, the managers, and the users very quickly developed bad relationships. Where the managers say these are my animals, I have to take care of them and you can only have them over my dead body. That is a very bad influence in terms of your harvesters, because the minute your harvesters do not appreciate their responsibility in terms of management -- if it is a resource that is being divided up by somebody else -- then he is going to try to get his share and that leads to a downgrading of your management system. So in terms of this final agreement, what we were trying to do was put responsibility and authority in place at the community level, which means the users.

Now out of the the final agreement, a number of structures developed. We have a Game Council which is basically all the harvesters from all the communities. As a regional group, they have the collective responsibility for the harvesting rights and the management functions together with government. The structure and responsibility of the Game Council as joint management bodies are now being legislated. The process is not going quite as quickly as we would like, but it shows a lot of promise. I think there are a number of us involved and they are quite excited about seeing the potential of this developing into a very constructive management system.

I hope I have given you a glimpse of this part of the country which from a biologist's standpoint and a management standpoint is an extremely exciting part of the country. The future will determine our ability to develop a stable renewable resource economy and in which portion of the economy it will occur.

In terms of our area, the control of the land and habitat is vital and the major component in terms of that aspect rests with the oil and gas industry. We are in the exploration phase now as I have said. Things may now not be busy but a great deal of attention was paid in that agreement to the types of land management directed at oil and gas. Since the signing of the final agreement we have undertaken major negotiations with Esso Resources on parts of our lands where we have surface rights, and we have also concluded a major freehold lease agreement. A major principle in both of these agreements is the protection of wildlife and the environment. What we have tried to do is to integrate as much as possible to keep the priorities straight for everyone and hopefully that will provide the basis upon which the option for renewable resource development will continue in the future.

SELF SUFFICIENCY THROUGH AGRICULTURAL DEVELOPMENT

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***ABSTRACT:** Agriculture on Indian Reserves is not an innovation, in fact many reserves in the past were self sufficient with agriculture as the economic base. However, the current situation is that Indian Communities have been left behind with respect to agriculture. While the non-Native communities have developed agriculture to be a major part of their economy, Indian resources of land and human resources are undeveloped. Unemployment on reserves in some cases exceed 80% with minimal tracts of reserve lands being utilized, farmed or ranched by non-Natives. The present age of agriculture demands a much greater efficiency and knowledge of current technologies. The capital demands have also increased in order to maintain and support viable agricultural projects. As Indian communities encountered problems to keep up with these developments, the gap has widened to the present situation of an underdeveloped resource in terms of land and people.*

1.0 PAST HISTORY

With a general acceptance of signing of the treaties and rapid disappearance of the buffalo, it seemed only practical for the Government of Canada through their representatives to encourage Agricultural Development on the reserves -- to start a new life of self determination through raising domestic cattle, growing gardens and various cereal crops. Throughout these years, various means were used to convert the proud warriors and hunters to become tillers of the earth; including the churches, farm instructors, and training in industrial schools to learn new skills. For example:

"The Canadian Government completed a study that predicted the buffalo would last for only 10 years after the treaty, but they survived for two years. In 1879, the buffalo disappeared on the Canadian side of the border" (Dempsey n.d.)

"During the winter of 1879-80, Red Crow had accepted the awful truth: the buffalo herds had been destroyed and the Bloods would now have to start a new life" (Dempsey n.d.).

In 1890, Red Crow realized "His decision to settle on his reserve and to build a house was not symbols of his acquiescence to the white man. Just the opposite was true; realizing that the old nomadic life was ending, he was willing to adopt any methods that would give him the self sufficiency he demanded, not only for himself but his tribe. He did not see the end of the buffalo as the death Knell for Indian, rather, he realized that drastic alterations would be required in order to survive."

"Just as the warrior used what ever weapons, wisdom, and brute strength, he had to defeat an enemy, so did Red Crow see the changing times as any enemy to be faced in the war of survival" (Dempsey, n.d.).

The Indian reserves were seeding crops as early as 1881 (MacLeod 1881) "On the 24th May 1881 Agent MacLeod reported: "we drove to the Blood Reservation where we found the seeding about finished."

From another reference (the Indian Affairs Annual Report 1881) on the Peigan Reserve, the Inspector of Agencies said "These Indians are very well to do and will, in my opinion, be the first of the Southern Plains Indian to become self-supporting" referring to crop production and gardening on this reserve.

A steady increase of farming from 1881 on the reserves prevailed until 1886 when "a severe drought reduced the potatoes to the size of marbles, and the grain was cut for feed" (Noteke 1982). For 15 years dry land farming was slow to pick up but by 1910, the number of farmers were on the increase." The period after the first World War witnessed a massive shift toward mechanization and, as long as farming remained relatively simple, the Indians were able to compete with non-Indian farmers". But when the conversion was made from the small scale horse-and-plough style of farming to larger acreages with mechanized equipment, bank loans, and a knowledge of modern business techniques, the average Indian had neither the education nor the cultural conditioning to compete, and he slipped farther and farther behind his white neighbors.

It was not until slightly after the second World War that the situation changed. Following the Second World War, joint farming in the Native community increased and appeared promising until the early 1960's. Other influential factors then lead to another drastic decline in the number of farming Natives. I believe the reasons for this were:

1. the elimination of the Indian Affairs farm instructor;
2. the lack of knowledge of weed control and the purchase of poor quality seed by the Indians;
3. little experience in business techniques;
4. the voucher system for purchasing by the Indians was discontinued. They were encouraged to use cash and seek their own financing;
5. financing was limited to the Indian people;
6. the dealers readily took advantage of their limited financing by inflating the price on machinery and selling the obsolete machinery. Many could not meet payments and therefore, they had no alternative but to lease their lands to pay back these loans;
7. a trend for more Indian people to lease land to non-Natives rather than farming it themselves;
8. the major acceptance of the breaking permits, where an outsider would develop land on the Reserves in exchange for a fee of a long term lease;
9. welfare became acceptable, and was easy to apply for. Some segments of the Native community believed it was their right to receive this easy money; and

10. the sudden introduction of alcohol in 1968.

It was not till the mid 1970's that more Indians considered farming again. The Indian Economic Development Fund (IEDF) was made a little more accessible to the Natives as a form of loan dollars for capital purchase and operating loans and the lending institutions were opening their doors to lend money to Indians. At this early developmental stages, the Indian farmers experienced the bumper crop years of 1980 and 1981. The good years mislead them to expand their farming operation only to be hit with the high interest rates and the drought years of the 1982 and 1985.

I would now like to relate some of my observations during the days of happy times and self sufficient observation while growing up in the Lavern, St. Mary School and Farm Four area on the Blood Indian Reserve in the 1950's.

In the early 1950's where I lived, I saw Indian people growing gardens with root cellars for winter supplies, raising chickens, milking cows for their children, raising cattle, fields and fields of barley and wheat crops by all working together. They helped one another also in curing prairie wool for their livestock feed and selling the surplus off the reserve. Nobody grew hungry and all were happy and proud they were providing for themselves.

I witnessed in the early 1960's the discouraging times in farming. During the 1970's when my neighbors around the St. Mary's dam district started farming, I helped my neighbor who was starting off with a small open cab tractor and a 14 foot cultivator. I helped right up to his expanding year of the 1980's where he was operating the latest equipment, plus up to the depression years of 1982 and 1985. This farmer and others are still determined to continue in the occupation of farming.

2.0 CURRENT SITUATION

In the past many attempts were made by the bands and various governments using programs and projects to provide meaningful employment and a base for agriculture on the reserves. Unfortunately these attempts have not always been successful and in many cases did little for the development of a strong economic agriculture base. During the recent move within the Native communities towards self determination, the leaders have focused on a agriculture economy utilizing the reserves greatest assets, the Land and the People. There are many intrinsic movements threatening the way of life of this great Canadian Society, therefore the challenge will be how can the most effective use of the base resources be turned into a solid agriculture economy.

The three treaty areas follow the geographical lines of the agriculture potential in the province of Alberta.

Total land base for the 42 reserves totals 1,437,269 acres.

Southern Alberta Treaty 7:	788,080 acres	55% total
Central Alberta Treaty 6:	370,124 acres	26% total
Northern Alberta Treaty 8:	279,065 acres	19% total

Indian Farmers and Band operations estimated the amount of land developed for agriculture to be a mere 114,000 acres or 25% of total and less than 13% of total resources suitable to sustain a crop.

The population mix of the Native communities is also an interesting indication of the future potential of agriculture.

Adults 19,897 or 49% of the population
Individuals under age of 19, 51% of the population

The challenge is to bring agriculture to the people within the reserve infrastructure utilizing educators with a wide practical background in Native agriculture.

At this point let's look at what is required to develop agriculture on the reserves; training, capital and land.

2.1 TRAINING

Taking the point of view that the resources are in place and the desire and determination confirmed, will modernization pose a threat in a society where the tradition was for the old to teach the young? The breaking from tradition by sending young people off the reserve to obtain training in advanced agricultural technology and marketing skills, has in some cases proven to be ineffective because of the embedded reliance and dependence placed on the reserve to provide a living or subsistence for all its people. Individuals with the courage to leave the reserve to seek agricultural training, find many obstacles to overcome when they return home to develop a farm.

A determination to solve these unique problems of preserving traditional ways while modern agricultural skills are attained, has required the foresight of the Indian leaders to form an Agriculture Development Corporation for those who wished to pursue a vocation in agriculture. The elected directors of the Corporation have taken great care in selecting employees with knowledge, experience and a natural ability to transfer their knowledge to other individuals.

Field workers are encouraged to use all the resources at hand to stimulate and encourage the individual to become self sufficient in agriculture.

The Corporation's mandate is:

1. To assist any individual farmer/rancher to plan a farming operation.
2. To assist the individual to identify and obtain the necessary funding to bring the project to realization.
3. To provide training and technical expertise for the individual to ensure a viable farming operation.
4. To study agriculture projects to enhance the agriculture component on the reserve.
5. To provide continuing advisory services which meet the needs of the individual.

2.2 LAND

An example of the obstacles are as basic as being able to secure a suitable land base. Indian reserves lands are owned by all of the people of the reserve. To secure land to

develop a farm operation requires approval of the Band. This approval is given at the will and pleasure of the Chief and Council and is revokable. Since many Bands have no formal land policy, the land use is always a point of considerable discussion and tends to deter aggressive agriculture development.

2.3 CAPITAL

The lack of available capital has been the most significant reason that the development of farming has not taken place. During the initial years the people were frustrated when capital was required to keep up with the mechanization of farming. Indian farmers were unable to secure a reliable source of credit from the lending institution and in an attempt to prove that they could do it on their own became frustrated with the system and caved in. Lending institutions failed the Native farmers because of a section in the Indian Act namely Section 89, which prevents an Indian from pledging land as a security to a loan. To secure loans, Indians were required to obtain guarantees or use IEDF which is a financial source of last resort. The IEDF program brought considerable delays in processing loans and untimely disbursements at critical times in the farmers operating cycle. The following illustrates how some of the \$5 million in financial assistance has been secured for Individual Agriculture Projects since 1980.

The total financial assistance is as follows:

Client Contributions	8%
IEDF Loans	45%
AIADC Contributions	25%
IEDF Guarantees	22%

This assistance has been utilized in the following types of agriculture projects the past five years:

Livestock	23%
Equipment	31%
Buildings	4%
Land Clearing	24%
Operating capital	16%
Other	4%

3.0 FUTURE PROSPECTS

Experience has taught us that the most successful enterprises are started small and developed within the resources and operating capital available with full support from other family members to the farm project. The opportunities to attain self sufficiency through agricultural development are unlimited. Even though there are the problems of capital, land and training, there problems are being dealt with in a variety of methods by many wise people. Our responsibility is to identify the need and to provide the encouragement to the individual for an opportunity to develop agriculture within the reserves structure.

4.0 CASE HISTORY

So often while working with Native agriculture, people tend to dwell on the negatives and overlook the success. With over 500 clients, AIADC has seen an 80% plus success rate. Let me share with you some of these success stories:

Meet a man in a northern community who set out to satisfy a need to produce fresh eggs for the isolated community of Desmarais/Bigstone/Wabasca, when other people said it could not be done. To start the project AIADC provided technical and financial assistance while the client located his markets. And as predicted, fresh farm eggs sold so well he couldn't keep up with the demand. In 1986, the operation was expanded by increasing the size of his hen house; cages were installed for 360 hens to reduce the workload and thus improve feeding efficiency of the animals and the production of clean and nutritious eggs.

Another illustration of a reserve training program is the Green Certificate program at Kehewin Reserve. This program was organized by AIADC to train five young men who had access to some land and machinery. The objective was to provide knowledge of modern farming techniques within the reserve structure. The encouragement and assistance to one of the young farm families has resulted in the family farm increasing in size from 350 acres to 550 acres. Once the rights to improve the bush land had been secured, another 150 acres were brought into production. This young family has developed a Hereford/Charolais cross cow herd to maximize the use of the land base and now they are reaching for the day when they will be able to derive their income solely from farming.

A family from the Peigan reserve operates a 460 acre ranch, and over the past few years established a herd of 250 Charolais cattle. The drought in southern Alberta encouraged the development of an irrigation system for 260 acres of forage crop. AIADC has been active in providing extension services to bring the irrigation project into full operation. This system provided the necessary water to produce feed for the animals while southern Alberta is experiencing the worst drought on record.

5.0 ACKNOWLEDGEMENTS

Some of the information in this paper is based on interviews with and observations from Julius English, Peigan Nation and George Runner, Sarcee Nation. It was a pleasure for Alberta Indian Agricultural Development Corporation to participate in the 1986 Symposium of the Alberta Society of Professional Biologists.

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WILD RICE PRODUCTION AND ITS IMPORTANCE TO THE NATIVE PEOPLE OF CANADA

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ABSTRACT: *Wild rice has been an important part of the culture of the Native people of Canada for many centuries. Originally used as a source of sustenance, for many Native people it has now become an increasingly vital part of their economic base. Unfortunately, the production of wild rice in lakes, as practised by the Native people, is under severe competition from paddy culture in the United States. Harvestable yields on lakes are only one fifth to one tenth those on paddies, and lake-grown wild rice has fallen to only 10% of the world wild rice market. Recent research has shown that lake production of wild rice is greatly influenced by the nutrient content of lake sediments, water depth fluctuations, and the genetic variability of the seed source. The future of the wild rice lake industry will depend on its ability to optimize these growth factors through mechanical and biological methods, which can achieve yields similar to those on paddies, and to develop new markets which recognize the unique nature of lake-grown wild rice.*

1.0 INTRODUCTION

Wild rice is an annual aquatic grass which typically is found in the many shallow lakes and rivers which dot the precambrian shield of mid-western North America. It is the only cereal which is indigenous to Canada, and is prized throughout the world as a culinary delicacy. Once important as a source of nourishment for the Native people, wild rice is today the basis of an expanding industry in many diverse geographical regions in North America. It remains, however, an important part of the cultural and economic lifestyle of the Native people of Canada.

2.0 HISTORICAL USE OF WILD RICE

Studies have shown that some wild rice stands are at least 2500 years old (McAndrews 1969) and have been harvested for human consumption as early as 1000 years ago (Johnson 1969). These large wild rice stands formed what is commonly known as the "wild rice bowl" extending from an area west of Lake Superior to southern Manitoba and into the adjacent states of Wisconsin and Minnesota (Jenks 1901). The Native people within this area depended largely on these stands for survival; when the crop was poor, famine often resulted.

Great religious and social significance was also attached to the wild rice harvest. Elaborate dances honoured the coming of the wild rice moon. It also provided a time when families could work together, a tradition which is still much in evidence today.

The traditional way of harvesting the wild rice was with a canoe and two tapered sticks. One individual propelled the canoe through the rice stand from the bow, while the

individual in the stern tapped the ripe grains off with the two sticks. Since the grain ripens unevenly, several passes were required to obtain as much of the crop as possible.

Once harvested, the grain was dried in the sun by spreading it on birch bark or skins, and then parched in a large bowl over an open fire. This loosened the chaff from the seed. Final removal was accomplished by dancing on the rice which was placed in a shallow hole. The grain was separated from the chaff by tossing the rice on a skin into the air and allowing the wind to blow away the unwanted debris. This completed, this highly nutritious food was then stored in birch-bark containers for use throughout the year (Steeves 1952).

The early European explorers of Canada also recognized the nutritional value of wild rice and it provided one of the mainstays for the long voyages of the fur traders. Historical accounts have described Alexander Henry, in 1774, trading with the Indians on Lake of the Woods for wild rice. The completion of his expedition across Canada was directly attributed to this. Henry himself wrote:

"Without large quantities of wild rice, the voyage beyond the Saskatchewan River could not have been prosecuted to its completion."

Wild rice is known to have been purchased by the Hudson Bay Company in northwestern Ontario as early as 1815, and by the rival Northwest Company in Minnesota and Wisconsin in 1804.

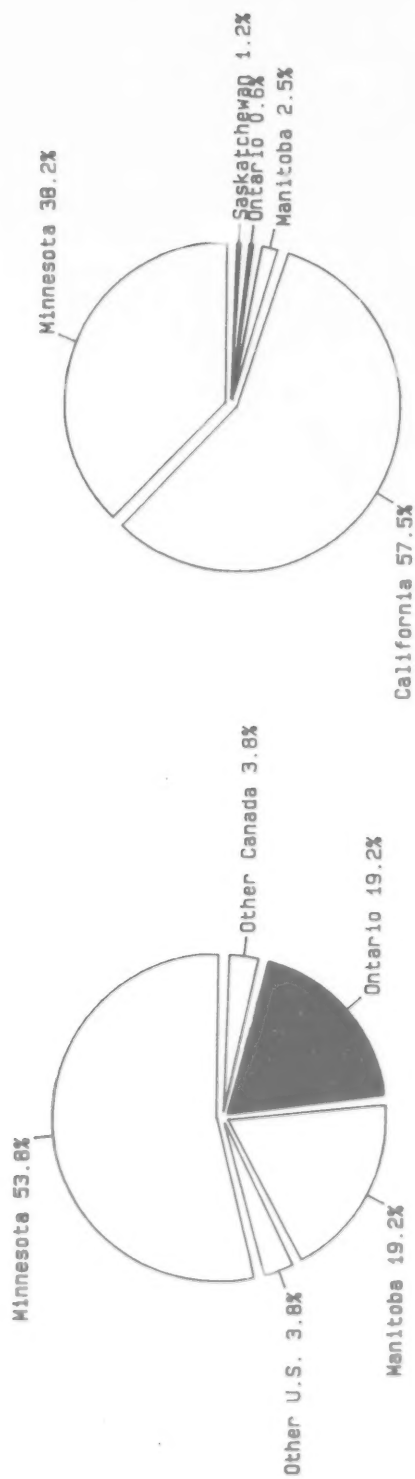
3.0 RECENT HISTORY

Throughout the late 19th and most of the 20th century, wild rice remained a small, regional industry, concentrated in northwestern Ontario, northeastern Manitoba, and northern Minnesota. Little changed from the way wild rice had been managed for centuries before. Harvesting of the large natural stands was done by hand, with, on the average, only one good crop every four years (Moyle 1945). The fluctuations in the size of the crop were caused by periodic high water levels on the major wild rice-producing waterbodies. These fluctuations were often severe. For example in 1973 under low water level conditions, over 500,000 kg of rice were harvested from Lake of the Woods but in 1974, under high water level conditions, the harvest fell to less than 5,000 kg (Lee 1975). These instabilities in the supply of wild rice had corresponding adverse affects on the marketing of the product. A stable supply was required. In the late 1960's and early 1970's change finally came to the wild rice industry with the introduction of wild rice paddies into Minnesota.

Figure 1 illustrates the impact of these paddies on the market share of Canadian lake wild rice. From 1960-1977 the average world production of wild rice from lake stands was 1.2 million kg. Canada accounted for approximately 40% of this production. In 1968, there were 400 ha of wild rice paddies in production in Minnesota. By 1977, this had increased to 4,000 ha and accounted for 50% of the world production of wild rice. In 1978, wild rice was introduced to California, and by 1985, that state was the leading producer of wild rice controlling nearly 60% of the world market. By contrast, the world share of production from lake rice grown in Canada has steadily declined to less than 5%.

3.1 PADDY VERSUS LAKE RICE

The main reason for the success of paddy culture is that it was possible to transfer much of the technology used in white rice growing to the cultivation of wild rice. A



Current Total Average
World Production 1960-77

Total Production 1.2 million kg

Current Total Average
World Production 1985

Total Production 11.1 million kg

Figure 1. Average world production of wild rice grown in lakes from 1960-1977 and current total world production of unprocessed wild rice from paddies and lakes.

research programme was started at the University of Minnesota, which developed non-shattering varieties of wild rice which could be harvested using white rice combines, and disease and insect control practices (Oelke et al. 1981). These advances allowed paddy growers to achieve sustainable yields up to 10 times greater than those on lakes. In California, the more moderate climate and lack of fungal diseases have resulted in even higher returns.

Lake production, on the other hand, had no technology that it could transfer. An industry, which was still producing rice in much the same manner as it had for centuries, suddenly found itself face to face with 20th century agriculture.

3.2 IMPACT ON THE NATIVE PEOPLE

The impact on the Native people has been severe. If the way of growing rice in lakes was to survive, then change had to occur. New growing areas not subject to water level increases and more modern methods of harvesting the grain were obvious requirements. But, as with most everything else, change is hard to accept when it conflicts with tradition.

The use of mechanical harvesters provides an example. These harvesters consist of a tray-like device known as a speedhead which mounts on the front of an airboat. When the harvester is propelled through the rice stand, the edge of the speedhead strikes the panicle of the rice plant, and the ripe grains fall into the tray. Ten or twelve passes over the same area are required each season. Although not particularly efficient (the speedheads obtain at best 25% of the crop), these mechanical harvesters can obtain in one hour what it took an entire day to harvest by hand.

Ten years ago, when it was originally proposed that these harvesters be used, there was very strong opposition from the Native people who feared that the machines would destroy the crop. This attitude has slowly changed and today the machines are widely accepted. Machines also brought with them disagreement in the licensing of the wild rice areas. In traditional growing areas, the licenses have always been issued to the bands. This system worked well when harvesting was done by hand, but with the purchase of mechanical harvesters by some band members, conflicts have arisen because of their harvesting advantage. This whole idea of private versus band ownership is still being resolved. Concern was also widespread among the Native people that the industry would be taken over by non-Native people who wished to seed new lakes. In Ontario, the government responded by invoking a moratorium on the issuance of new licenses to non-Native people in northwestern Ontario.

It is interesting to compare the response to the need for expansion and change in this industry between Saskatchewan and Ontario. In Saskatchewan, wild rice is not naturally found and no traditions surround the industry. Through government seeding programmes, and the provision of extension services, people were encouraged to grow wild rice. There are no government restrictions for non-Natives and all licenses are issued to individuals. The Native people have been extremely successful, controlling virtually the entire industry in that province, and in only a few years, have caused Saskatchewan to become the leading producer of wild rice in Canada. Equally important, they have demonstrated that wild rice can be extended on a large commercial basis into lakes in Canada which do not presently support this crop. This success has spawned interest elsewhere, and today wild rice is increasingly being accepted as an integral part of northern economies from the Maritimes to northern Alberta.

3.3 POTENTIAL FOR DISPERSAL

The potential for dispersing wild rice to new producing areas in Canada seems almost unlimited (Figure 2). In northern Ontario alone, there are over one million lakes; wild rice is being successfully introduced into western Manitoba and northern Alberta where it is estimated at least 4,000 ha of wild rice can be grown; and recently test seedings have been conducted in Quebec which has an immense number of lakes. However, increasing area under cultivation is, by itself, not enough to compete against wild rice paddies; yield per unit area must also be increased to the same level as paddies. In this regard, research must be done to develop this ability. Unfortunately, research on wild rice in Canada has received little attention, and, just recently, the only major project ever conducted on this subject was completed at Lakehead University in Thunder Bay, Ontario (Lee 1981 - 1985).

4.0 RESEARCH FINDINGS

The objective of the Lakehead programme was to examine the major wild rice production problems and devise management techniques to correct them. These major problems consist of water depth fluctuations, nutrient requirements, weed control, and a variety of factors which collectively affect stand establishment. Detailed findings of this research are contained in the reports by Lee (1982 - 1985). The key findings of this research are summarized below.

4.1 WATER DEPTH

Water depth is the most important factor influencing a wild rice crop. The ideal depth is approximately 0.3 - 0.6 m. Increases in depths from preceding years of 0.3 m in Minnesota and 0.6 m in Ontario have been shown to nearly eliminate the crop (Moyle 1944, Lee 1975). The problem with deep water is that it does not allow sufficient light penetration for adequate photosynthesis to occur.

Sudden fluctuations in water depth are also detrimental to wild rice growth and have been reported to cause severe damage to the wild rice crop (Chambliss 1940). Such fluctuations are common in the larger waterbodies of northwestern Ontario and the objective of our water depth research has been to determine which phenological stages of wild rice development are most affected by water depth fluctuations, and how much depth fluctuation wild rice can tolerate. Such information could be used by water-level control agencies to time their water release from control dams so that the least damage would be done to the wild rice crop.

To conduct this study we used large floating rafts from which we suspended plastic buckets containing wild rice. At the submerged, 1st floating-leaf, 2nd floating-leaf, and first aerial-leaf stage, the plastic buckets containing wild rice were lowered 1, 15, 30, and 50 cm. Based on our field research, we had anticipated a high mortality when the plants were lowered. This did not happen and even those plants lowered 50 cm were able to survive and were extremely vigorous (Figure 3). The only difference from field conditions was that the rice plants were heavily fertilized so there would be no nutrient stress to the plants. This suggested that it is not simply water level fluctuations which cause mortality; rather, it is water depth increases under nutrient stress. After conducting further experiments with varying amounts of fertilizer we found this to be the case.

OCCURRENCE IN CANADA OF
NORTHERN WILD RICE
ZIZANIA PALUSTRIS

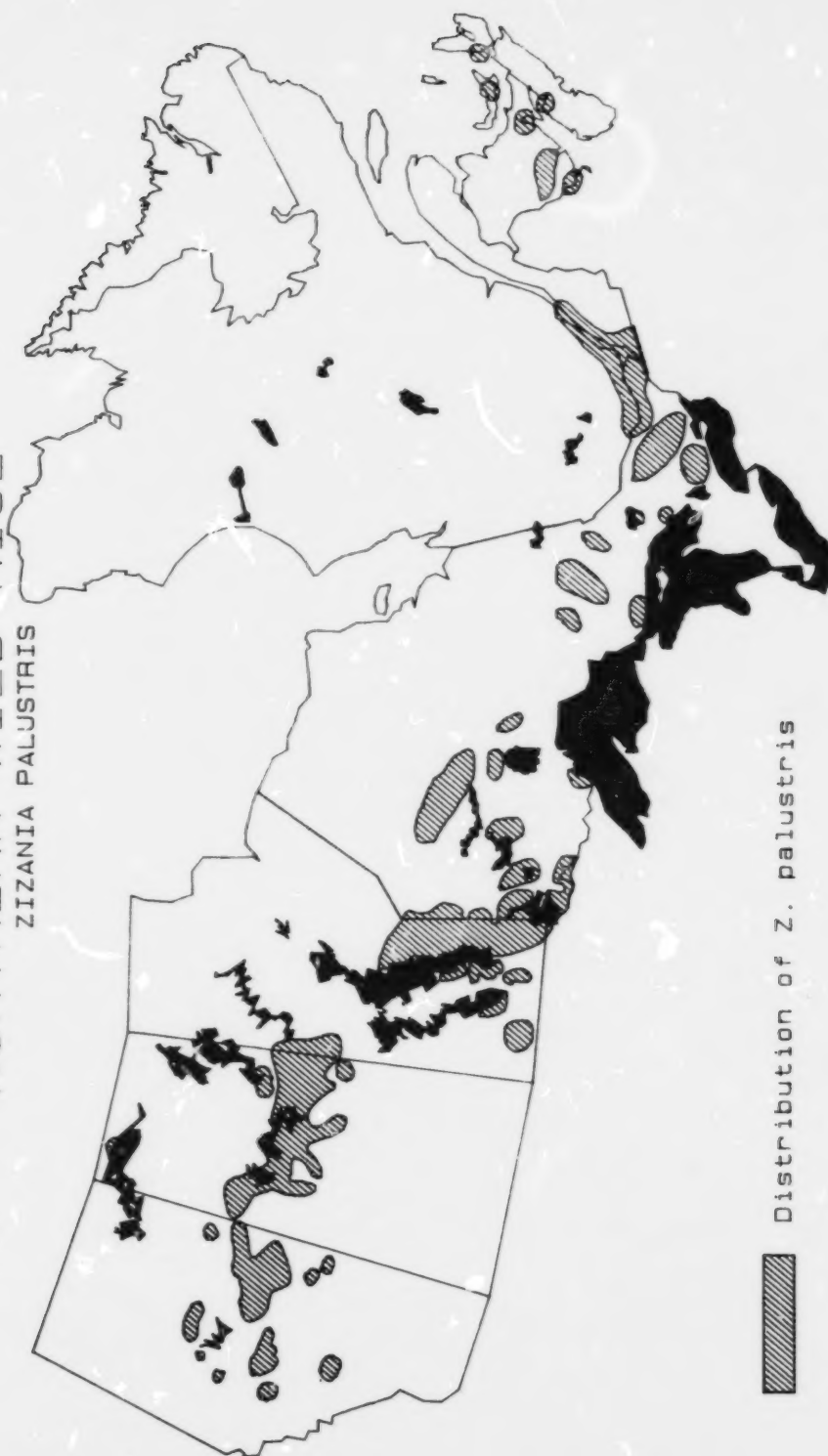


Figure 2. Current distribution of wild rice in Canada.

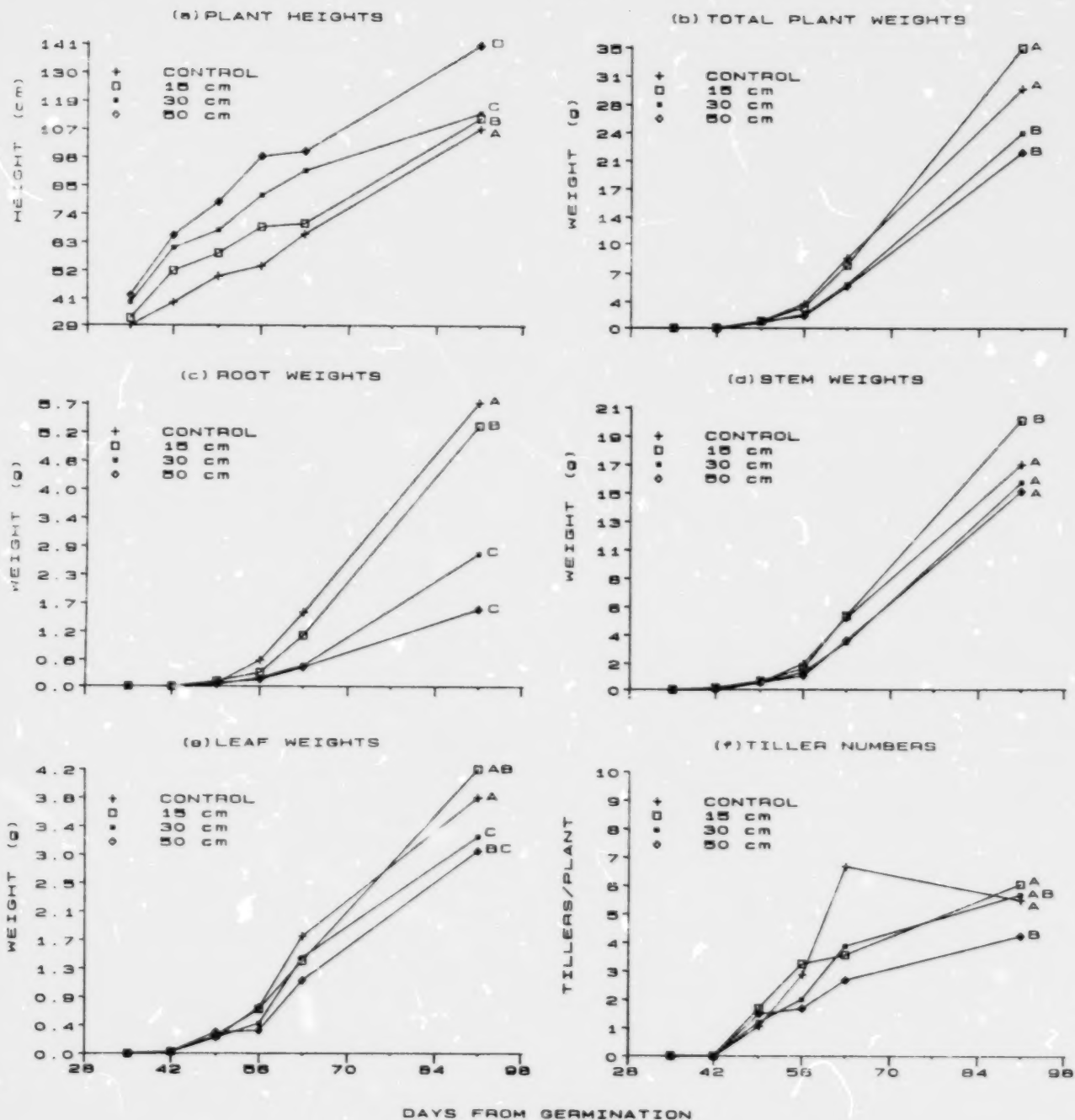


Figure 3. Seasonal growth of wild rice plants after they were inundated during the second floating leaf stage. Note the absence of mortality and excellent production for all inundation depths (from Stevenson 1985).

4.2 NUTRIENT STUDIES

Our nutrient studies have concentrated on two aspects:

1. the importance of nutrients in the selection of potential wild rice lakes; and
2. the nutrient requirements for stable production in lakes.

4.2.1 Selecting Potential Lakes

Based on several hundred samples from lakes across northwestern Ontario, a soil suitability criterion was derived which can predict the production potential for a lake. In this region, the major factors which influence a lake's ability to support wild rice are the levels of nitrogen, phosphorus, and organic matter. Best production occurs in organic soils which have high concentrations of nitrogen and phosphorus. Production is poor in mineral soils, although these are sometimes excellent producers if enhanced by the presence of the submerged aquatic plant, Robbins's pondweed (*Potamogeton robbinsii*).

4.2.2 Production Requirements

Wild rice, like other cereals, depletes the nutrient reserves of soils. In one intensively managed lake, the levels of nitrogen, phosphorus, potassium, iron, manganese, zinc, copper, calcium, and magnesium had declined after six years, but the most noticeable drop was for nitrogen which was only one tenth of its original concentration. Experiments in the greenhouse, cultivation rafts, and the field have shown that wild rice responds best in such nutrient-depleted soils when heavy, slow-release fertilizer pellets are added which sink into the soft sediments. However, on a commercial basis the use of this type of fertilizer is too costly, and currently experiments are being conducted on the feasibility and effectiveness of conventional fertilizers which are injected into the sediment using high pressure water pumps.

5.0 WEED CONTROL RESEARCH

Our weed control research is primarily concerned with eliminating competing emergent aquatic macrophytes. The most common problem species is Spikerush (*Eleocharis* spp.).

We have tried various techniques to control this weed using mechanical methods. Periodic cutting of the stems during the growing season had no effect on this plant. A second theory was that the rhizomes in winter depend on the culms protruding through the ice for their supply of oxygen: if the culms were cut off at ice level, the plants would die. We tested this idea by pulling a cutting bar behind a snowmobile. No damage was observed for Spikerush and the technique was abandoned.

Best success has been achieved in controlling these emergent macrophytes by using herbicides which are applied with a modified brush-on type of applicator. The herbicide can be applied to the target species while wild rice is still in the floating-leaf or submerged stage. The boom, which is saturated with herbicide, can be raised or lowered depending on the height of the competing species. This method gives nearly complete control of the competing species and has no effect on wild rice. This method also has two distinct environmental advantages: 1) no herbicide is directly applied to the water, and 2) amounts required for control are one-hundredth to one-fiftieth the amounts recommended for conventional spraying applications.

6.0 STAND ESTABLISHMENT RESEARCH

Research on wild rice cultivars in Minnesota has revealed genetic variability for certain morphological and phenological traits (Foster and Rutger 1980) and phenotypic plasticity in response to temperature and day length (Oelke et al. 1981). However little information exists on genetic and phenotypic variation in lake wild rice and our stand establishment research has been primarily concerned in determining whether genetic differences do exist among natural wild rice populations. Specifically we are interested in any seed sources which are more suited to deeper waters, shorter growing seasons, and clay soils and have higher yields. We have found the following (Counts 1985):

1. In spite of high levels of intra-population variability, wild rice populations are genetically differentiated, and therefore it is worthwhile to select among populations for desired characteristics.
2. Many of these characters show clinal variation (Figure 4), so certain traits may profitably be sought in particular climatic areas. For example, if early flowering or short stature to reduce lodging and straw accumulation are desired, a population that has evolved in a severe climate will probably be a suitable seed source. On the other hand, if higher plant yield are a priority, seed from a population in a moderate climate would be appropriate.
3. The intercorrelation of growth characteristics in wild rice make it unlikely that all desirable traits will be found in a single population. However, populations do exist which have unusual combinations of characters and these may be extremely useful to the grower or plant breeder.
4. Since climate does exert a strong selective pressure on wild rice populations, the stability of populations that are introduced into lakes with different climatic conditions becomes a critical issue. Evidence we collected from such transplanted populations indicates that the properties of wild rice populations can change over relatively short periods of time. If this is the case, it may be necessary for the grower to monitor introduced wild rice stands fairly closely and periodically upgrade them through artificial selection.

7.0 IMPLICATIONS OF RESEARCH FOR FUTURE DEVELOPMENT

These research findings have both immediate and long-term implications.

The immediate importance of the research is that it is now possible to predict a lake's suitability for wild rice introduction. It is also possible to recommend suitable strains of wild rice for the appropriate conditions at hand. These findings have already been implemented through our extension services which entail everything from soil testing (utilizing facilities specifically designed for submerged soils), to on-site inspections and the assessment of a lake's economic value through our computer-based Wild Rice Decision Support System. This service has been particularly popular with the Native people, and this summer, in cooperation with the Ontario Indian Wild Rice Development Agency, seven Native students will be employed in our extension programme as wild rice field technicians. In the short term then, the findings of the research programme are highly beneficial, both socially and economically, and universally accepted and supported. The long term implications, however, are more controversial.

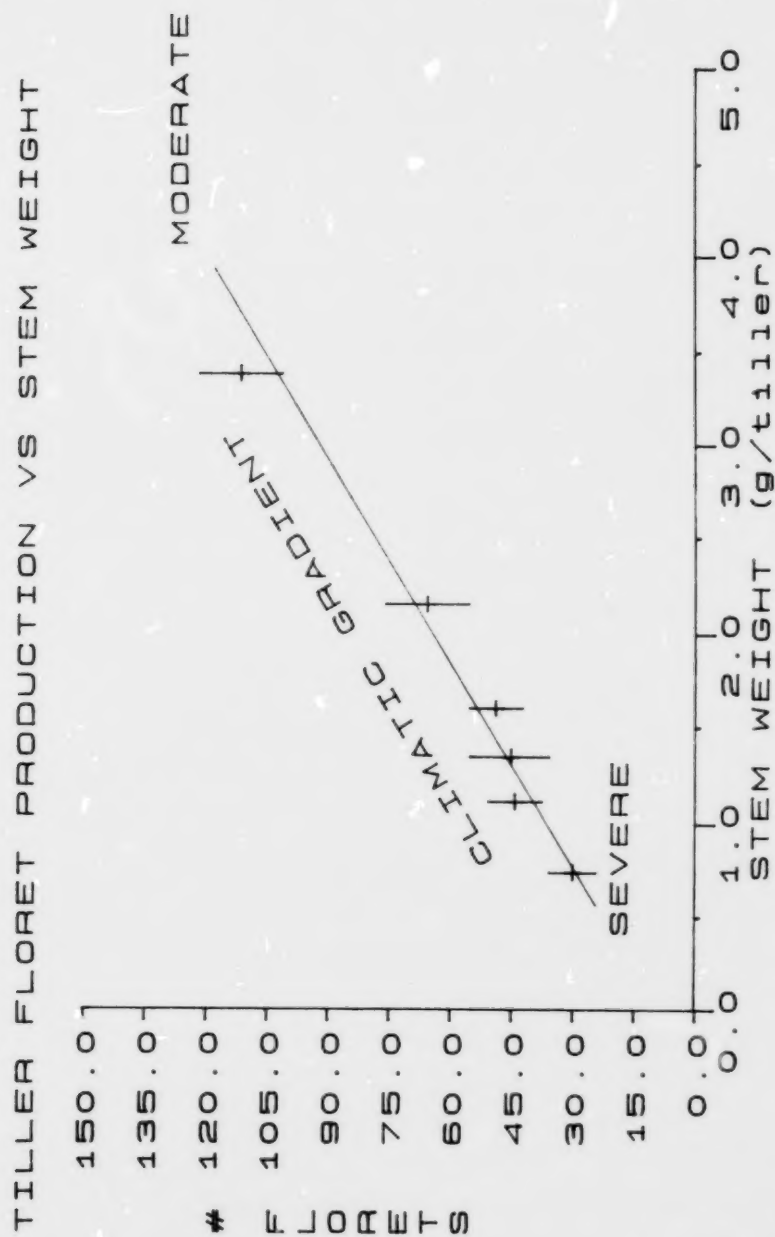


Figure 4. Floret production versus stem weight for wild rice populations along a climatic gradient from moderate to severe.

This research has also shown that it is possible to achieve higher, sustainable yields by the use of management techniques which include nutrient additions, weed control, and genetic selection. The technology does not exist for immediate implementation of all of these practices, although there is absolutely no doubt it could be developed. But what is also required is the development of policies which would allow the manipulation of these aquatic environments. These implications, unlike the short-term implications, will not be universally accepted. There are environmental considerations and, as biologists, we have a responsibility to ensure that any possible detrimental effects on the environment are carefully considered. But we also have an equal responsibility to ensure that the full potential of Canada's only Native cereal is realized.

Biologists must work together with the people of the north who have always had the determination and vision to believe in this land. As the great chief, Tecumseh, who died fighting for his people and for Canada in the war of 1812, said:

"I am the maker of my own fortune. And oh, that I might make the fortunes of my red people, and of my country, as great as the conceptions of my mind, when I think of the Great Spirit that rules this universe."

We must do our part to ensure that this wish of Tecumseh is never forgotten.

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PANEL DISCUSSION:
ANIMAL RIGHTS AND RESOURCE ECONOMICS

THE ANIMAL RIGHTS VIEWPOINT

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ABSTRACT: *The inaccurately-called "Animal Rights" movement, its objectives, participants, and leaders have been the subjects of considerable debate and discussion within the renewable resource industries. What is evident and somewhat surprising from the statements, news items, books, articles, symposia and discussion papers prepared by participants in the renewable resource industries' is their political and economic naivete. The "Animal Rights" movement is discussed, usually in disparaging terms, as an adversary that will somehow be vanquished and eliminated from the social fabric. In truth, the "Animal Rights" phenomenon has evolved like any social movement. Consider the development of political parties, environmentalism, women's suffrage, civil liberties, or the labour movement. Predictably, the political ideas and ethics of the "Animal Rights" movement are inextricably entrenched in the conscience of a growing segment of the public and its corporate structures are permanently, economically institutionalized. The real, politically and economically onerous, and as yet unaddressed problem confronting the renewable resource industries, which are in many cases highly vulnerable to the trends in the marketplace, is not the elimination of the "Animal Rights" movement (which historical evidence suggests is impossible); it is rather the very difficult task of either market and economic restructuring or the orderly elimination of, eventually, most of its participants.*

1.0 INTRODUCTION

The inaccurately-called animal rights movement, its objectives, participants, and leaders have been the subjects of considerable debate within the renewable resource animal-based industries. Considering the impact the movement has had on the trade in animal products, this is not surprising. But what is surprising is the lack of political and economic understanding displayed by the participants in the debate, including governments.

The animal rights movement is discussed, usually in disparaging terms, as an adversary that will somehow be vanquished and eliminated from the social fabric. In truth, the animal rights phenomenon has evolved, and continues to evolve like any social movement. Consider the development of political parties, environmentalism, women's suffrage, civil liberties, or the labour movement. Predictably, the political ideas and ethics of the animal rights movement are inextricably entrenched in the conscience of a growing segment of the public. As well, the corporate structures of the movement have become permanently, economically institutionalized.

Consequently, the real -- albeit politically and economically onerous, and as yet unaddressed problem confronting the renewable resource industries -- is not the elimination of the animal rights movement, which historical precedent suggests is unlikely, but rather the very difficult task of either market and economic restructuring or the orderly elimination of, eventually, most of the participants in the animal-based renewable resource industries.

This reality will have a measureable effect on Native peoples and has prompted considerable concern and research within organizations involved in animal rights and animal protection.

2.0 NATIVE PEOPLES

It is well known that Greenpeace withdrew from a British-based anti-fur campaign over a conflict within the organization regarding its potential impact on Native peoples. Greenpeace believes that strong ties with indigenous communities are essential to their environmental work concerning pollution in the Arctic. Before the fur fashion industry takes too much comfort from the Greenpeace decision, it should be aware that the British arm of Greenpeace continues to heavily lobby Greenpeace International to change its position and that the members and supporters of Greenpeace have been adamantly opposed to the withdrawal. Although Greenpeace prides itself as an environmental organization as opposed to an animal rights organization, the bulk of its support comes from people contributing to its animal causes: whales and seals.

Recently a paper was distributed by the Canadian Association for Humane Trapping (CAHT) to the member organizations of the Canadian Federation of Humane Societies (CFHS) urging them not to support an anti-trapping resolution to be presented at the CFHS's annual meeting. One of the reasons given under the subheading, Sensitive areas to consider in a no trapping policy, was this:

"Northern and indigenous peoples and traditional lifestyles - The stickiest issue politically. This will be one where animal rightists and the environmentalists will come unstuck and not be able to provide a common front" (Anon. 1986).

The political conclusions drawn by the CAHT are probably incorrect and certainly premature. A great deal of research has been done over the last six months regarding the relationship between Native peoples and the fur trade and, in particular, the impact of Native peoples on wildlife and the effect of the fur fashion industry on Native peoples.

The CAHT's concern about political "stickiness" is probably based for the most part on a lack of understanding about the Indian/fur trade relationship. In fact, contrary to the CAHT's conclusions it may well be that the role of the Native people in the trapping issue and the effect of the trade upon them is what will end the fur trade once and for all. Three of the most compelling and cogent arguments against the fur fashion industry are its direct and indirect responsibility for the deaths of literally millions of Native people, the industry's complicity in the destruction of the Native culture and, in the case of the Indian, their primary role in the massive and wanton over-killing of furbearers.

These arguments are already finding their way into anti-fur fashion direct mail appeals and newspaper advertisements (Ark II 1986). And, as expected, are being received sympathetically by animal rights and animal protectionist supporters. The portrayal of Native peoples as a symbol or heroes of the environmental/ecological movement is well known. Rennard Strickland stated:

"The idea of ecology demands the ideal of the Indian. ... It is not an accident that the idea of ecology and the ideal of the Indian should emerge simultaneously as national issues" (Strickland 1970).

Stuart Udall found it "...ironical that today the conservation movement finds itself turning back to ancient Indian land ideas, to the Indian understanding that we are not outside of nature but of it" (Udall 1963).

Proponents of the Canadian fur fashion industry, including Native groups, have pushed Native peoples into the forefront of their campaigns to promote the use of furs in an attempt to take advantage of the public's image of the exotic Indian and Inuit (Anon. 1985). Creeds, the Toronto furrier, even uses an advertisement depicting a photograph of a grinning Inuit trapper standing upon a rocky hillock bearing upwards of fifty Arctic fox pelts. This is understandable. There is little moral justification to be found in killing animals for fashion: many people find it not just unacceptable but repugnant. The argument of a fur fashion industry promoting Native culture and tradition, on the other hand, provides a more acceptable moral currency notwithstanding the small contribution Native peoples make to the modern fur fashion industry.

It is natural that the use of the Native peoples by the fur fashion industry and the strident determination of Native leaders to promote the exploitation of animals would cause those involved in the animal rights movement to take a more in-depth look at the impact of the fur fashion industry on Native peoples and the impact of Native peoples on animals both before and after European contact.

2.1 THE IMPACTS OF NATIVE PEOPLES ON WILDLIFE

There was a time when the proponents of animal rights would have agreed with statements attributed to George Wenzel of McGill University by Alan Herscovici (1985) concerning the Inuit:

"The idea that man and animal share the same environment means that you look at an animal the way you would approach a human being - as an entity that deserves respect and has to be treated in certain ways, and is not open to misuse - and this means that you have to be in constant contact with an animal species".

Or with statements attributed, again by Herscovici(1985), to Colin Scott of McMaster University:

"...for the Cree, reciprocity is a very much bigger idea than that, and it really gets into their relationships, not just with other people, but with animals. From within that view of things, if you mistreat animals in the same way that you mistreat people, or if you disrespect animals in various ways, you're bound to provoke some kind of reaction which will not be in your own interests. So the notion of reciprocity in some ways unites the cultural and the natural domains".

Herscovici's work is referred to frequently in this paper as his ideas and book have become the recognized argument among participants in the fur fashion industry as to the "truth" about the animal rights movement. Herscovici is also mentioned frequently in the pages of the fur fashion industry's trade paper, *Fur Age Weekly*. For example:

"There was a radio show dealing with the fur issue. Through the hard work of Ray Kelly, a mink rancher and Harold DeHart, President of the Fur Farm Animal Welfare Coalition, an authority was provided. This authority was Alan Herscovici, an author and broadcaster from the Montreal area. Alan is well versed on the fur industry and his income does not rely on it. [author's

note: Herscovici's family has had extensive interests in the fur fashion industry.] "We need people like Alan" (Rubman 1985).

It is abundantly clear, however, from the available literature that the case made by Herscovici (1985) in Second Nature: The Animal-Rights Controversy concerning the Native peoples' "respect" for wildlife is either patently untrue or the term "respect" and its implications for wildlife require greater clarification. Samuel Hearne's journal contains numerous references to the wanton killing of animals by his Chipewyan guides including the practice of taking far more caribou and muskox than they required and the act of cutting out the choice tongue and fat and leaving the bulk of the carcass to rot.

"To induce them to desist from this practice, I often interested myself, and endeavoured, as much as possible, to convince them in the clearest terms of which I was master, of the great impropriety of such waste; particularly at a time of the year when their skins could not be of any use for clothing [this particular incident occurred in June 1771], and when the anxiety to proceed on our journey would not permit us to stay long enough in one place to eat up half the spoils of their hunting. As national customs, however, are not easily overcome, my remonstrances proved ineffectual; and I was always answered, that it was certainly right to kill plenty, and live on the best, when and where it was to be got, for that it would be impossible to do it where everything was scarce: and they insisted on it, that killing plenty of deer and other game in one part of the country, could never make them scarcer in another. Indeed, they were so accustomed to kill every thing that came within their reach, that few of them could pass by a small bird's nest, without slaying the young ones, or destroying the eggs" (Hearne 1795).

An employee of the Hudson's Bay Company, John Dunn, described the company's attempts to encourage the regulated hunting of the beaver.

"But the attempt will easily be understood to be one of extreme difficulty in consequence of the passion for depriving the animal creation of life so strongly implanted in the breast of the North American Indian, that it costs him a pang to pass bird, beast, or fish, without an effort to destroy it, whether he stands in need of it or not. The tendency to destructiveness is a vehement instinct of their nature" (Dunn 1845).

Governor George Simpson, the newly installed governor of the company formed out of the merger of the Hudson's Bay Company and the North West Company, attempted unsuccessfully, as well, to encourage some form of restraint in hunting the beaver.

"... he tried to encourage the Indians to stop taking cub beaver during the winter; but he doubted this effort would succeed since the Indians considered the meat of the young beaver to be a delicacy. And indeed, the attempts to discourage summer trapping of this animal failed for similar reasons. In many districts food had become so scarce that the Indians would kill and eat beaver whenever they ran across them. To prevent the Hudson's Bay Company traders from finding out, the Indians would not bring these pelts into the posts for trade. In fact, to avoid detection they often hid the furs or disposed of them in such a way that no one could find them" (Ray 1974).

For Calvin Martin the detrimental impact of Native peoples on wildlife is not open to question.

"To put it bluntly, the Indian was everywhere, except in the Rocky Mountain trade, the principal agent in the over-hunting of furbearers. That is undisputed. He was also, as in the case of the Western Canadian trade throughout the nineteenth century, largely responsible for the intense exploitation of large herbivores (in this case, bison) whose flesh was used to provision fur company posts.

"What we are confronting is a monumental case of improvidence. It is difficult to imagine how an individual whose subsistence economy was underpinned by a reliance upon fish, game, wild plant foods, and, in some cases, cultivated plants could have been so oblivious to wildlife population dynamics as not to see that his present course of hunting was far too exploitative. The fur-trading Indian, whether he be a member of a hunter-gatherer society or a horticultural society, was simply too skilled a hunter to overlook the ultimate consequences of wildlife overkill. Early records confirm this skepticism. More than one fur company agent or missionary recorded in his journal the lament of some heart-sick Indian informant who plainly recognized that the reckless hunter was digging his own grave. And yet the raid on furbearers continued, encouraged by Jesuit missionaries and fur company agents and prosecuted by the Indian himself " (Martin 1978).

It may be argued that the wanton destruction of wildlife by the Indian was the result of contact with Europeans but even here there is dispute as Martin points out.

"... the Indian's initial impulse to destroy wildlife may not have been a desire to harvest their furs for trade. That came later. However improbable it may seem to our Western way of thinking, the explanation seems to lie in the fact that on the eve of European contact, man and beast were at war. The Indian, true to the behavioral environment in which he operated, was convinced that the bear and the beaver (doubtless in league with other species) conspired against man to destroy him" (Martin 1978).

There is no need to dwell on the point for it is more than evident that the role model of the Native North American as a conservator of animals and living in harmony with nature is not supportable. The Native community has proven it can be just as destructive towards wildlife as any other community of people. If there is a uniqueness in the North American Native's approach to the environment, it is more of a myth or a legend than a reality.

Current observers are more circumspect about the hunting practices of modern Native peoples, no doubt due to a sensitivity to the ubiquitous charges of racism and the implications of the availability of research and program funds, yet the record of unrestrained and unregulated hunting is still apparent in modern research publications (Anon. 1984). Whatever the argument the destruction of wildlife by the Indians was a fact and no amount of so-called "respect" for animals or nature was able to prevent it.

In Lewis Carroll's *Through the Looking Glass* there is a meeting between Humpty Dumpty and Alice; the dialogue goes like this:

"When I use a word," Humpty Dumpty said in a rather scornful tone, "it means just what I choose it to mean -- neither more nor less." "The question is," said Alice, "whether you can make words mean so many different things." "The question is," said Humpty Dumpty, "which is to be Master -- that's all."

For the animal rights movement the question is: just what does a fur fashion industry spokesman or a Native leader or a sympathetic journalist mean when he uses the word "respect" and what effect does that "respect" have on wildlife. It cannot be assumed that the word "respect", as used by Native Canadians, means appreciation, concern, or compassion for animals; yet it would seem that this is the meaning they would hope most people would believe. It seems apparent that what Native people mean by "respect" is actually "fear".

Barry Lopez (1986) in his book *Arctic Dreams*, writes about the this fear among the Inuit.

"When I have thought about the ways in which [Eskimos] differ from people in my own culture, I have realized that they are more afraid than we are. On a day-to-day basis, they have more fear. Not of being dumped in cold water from an umiak, not a debilitating fear. They are afraid because they accept fully what is violent and tragic in nature. It is fear tied to their knowledge that sudden cataclysmic events are as much a part of life, of really living, as are the moments when one pauses to look at something beautiful. A Central Eskimo shaman named Aua, queried about Eskimo beliefs, answered, 'We do not believe. We fear.'

"To extend these thoughts, it is wrong to think of hunting cultures like the Eskimo's as living in perfect harmony or balance with nature. Their regard for animals and their attentiveness to nuance in the landscape were not rigorous or complete enough to approach an idealized harmony. No one knew that much. No one would say they knew that much. They faced nature with fear, with *ilira* (nervous awe) and *kappia* (apprehension). And with enthusiasm. They accepted hunting as a way of life -- its violence, too, though they did not seek that out. Neither were the lives of Eskimo people filled with compassion. Compassion is a difficult virtue for a hunting culture to maintain in a harsh land. Nor were they innocent. There is murder and warfare and tribal vendetta in their history; and today, in the same villages I walked out to hunt, are families shattered by alcohol, drugs, and ambition".

The fear Native peoples held, and may still hold, for animals and nature is also well represented in the literature as is, as Martin pointed out, a sense of an ongoing war between Indian and beast. David Thompson describes a meeting with two Cree near Lake Winnipeg in which the time before the arrival of Europeans was discussed:

"The old Indian paused, became silent, and then in a low tone [they, the two Cree] talked with each other; after which he continued his discourse. I have told you that we believed in years long passed away, the Great Spirit was angry with the Beaver, and ordered Weesaukejauk (the Flatterer) to drive them all from the dry land into the water; and they became and continued very numerous; but the Great Spirit has been, and now is, very angry with them and they are now all to be destroyed" (The Champlain Society 1962).

2.2 THE EFFECTS OF THE FUR TRADE ON NATIVE PEOPLES

Herscovici (1985) maintains that "Fur trapping is one of the few activities through which the Native people have been able to successfully participate on their own terms in the dominant economy". "Indian hunters were not quite as naive and helpless as our high-

school books have led us to believe. The fur trade, in fact, was one of the few aspects of European civilization that the Indians were able to turn to their own advantage, and in which they could participate on their own terms. Guns, horses, traps and, more recently, bush planes and shortwave radios might be adopted, but they were integrated into a lifestyle that remained bush-oriented and Indian".

Herscovici's analysis of the effect of the fur trade on Native peoples is entirely inconsistent with virtually all scholars. The fur fashion industry had an appalling effect on the very existence of the Native peoples. It is estimated that because of diseases from the European contact the Native population declined by as much as 90% (Cook 1973). Considering this, it is inconceivable and highly suspect that Herscovici, government spokesmen, or Native leaders would defend the fur fashion industry as somehow conducive to the Native way of life. Is it any wonder that participants in the animal rights movement are deeply suspicious of claims about the benefits of the fur fashion trade to Native peoples, whatever the source?

Martin (1978) describes the effect of the fur trade this way:

"Fur trade scholars are in uniform agreement that over the long run, the trade was a disaster for the Indian tribes involved: severe cultural disruption and other physical dislocation were commonplace". "...Participation in the [fur] trade drove the Indian even further into a position of uncompromising callousness toward Nature, as he progressively shifted his allegiance from the spirits of his handicrafts to the secular commodities of Western Europe. The function of the Indian now changed from conservator to despoiler: certain game animals were heavily exploited while others were virtually exterminated".

For the Native peoples the fur fashion industry destroyed their way of life and replaced it with what was essentially a culture of indentured labour for the benefit of European fur trading companies. The most compelling account of the effect of the fur fashion trade on Native peoples is by Diamond Jenness (1932):

"Furs, always more furs, the traders demanded for the steel tools, the guns, ammunition, liquor, and other prerequisites of civilization that they held out as bait to the various tribes. Previously the Indians had paid little regard to the smaller fur-bearing animals, which held an insignificant place in their food supply. To meet this new and unceasing demand they trapped intensively, and when they had depleted their own hunting-grounds expanded into new areas, often invading the territories of their neighbours."

"For several years all these Indians were rich, the women and children, as well as the men were covered with silver broaches, ear-rings, wampum, beads, and other trinkets. Their mantles were of fine scarlet cloth, and all was finery and dress. The canoes of the fur-traders were loaded with packs of beaver, the abundance of the article lowered the London price. Every intelligent man saw the poverty that would follow the destruction of the beaver, but there were no chiefs to control it; all was perfect liberty and equality. Four years afterwards (1797), almost the whole of these extensive countries were denuded of beaver, the Natives became poor, and with difficulty procured the first necessities of life, and in this state they remain, and probably forever."

"On the plains the advent of the fur trade and introduction of horses produced a similar result. Firearms and horses converted the buffalo hunt into a royal sport that attracted tribes from far and near. The tribes that jostled together on this amazing hunting-ground combined the buffalo chase with ceaseless wars, and raided each other for firearms, horses, and scalps until the whole area from the Rockies to the Great Lakes became a perpetual battlefield."

"About 1879, the herds at last failed to appear, and the Indians, dying of starvation, had to accept unreservedly the conditions laid down by the white man. Throughout the whole country, indeed, there was a serious diminution in the food resources of the tribes that depended on fishing and hunting."

"No longer was each tribe a self-contained and self-supporting unit, but from the Arctic to the prairies and from the Atlantic to the Pacific all alike found themselves inextricably enmeshed in the economic system forced upon them from without. One by one they ceded their territories to the invaders, and wherever European colonization was proceeding, submitted to confinement on narrow reserves. The needs of the colonists then became their needs also, and in the place of their former self-sufficiency, they were reduced to purchasing most of the necessities of life at the European trading stores. Economically and socially, then, the Indians were cut adrift from their old moorings at the very time when their ranks were being decimated by previously unknown diseases".

Arthur J. Ray (1974) discusses the effect of the fur fashion trade on the Woodland Indians:

"... the Woodland Indians came to rely increasingly on their trapping operations in spite of the fact that the fur resource base was declining too. Moreover, to carry on these activities successfully they had to turn to the traders for their ice chisels, axes, traps, and other equipment. In brief, the tribal bands living in the forested tracks of land required a greater variety of metal goods, consumed more ammunition, and placed a higher value on cloth and blankets than did the Indian groups living in the parkland and grasslands. But in addition, like the latter groups, they also had become addicted to alcohol and tobacco."

Alcohol was used extensively and ruthlessly by the fur fashion traders as an item of barter. Although the French clergy was well aware of the devastating effects it had on the Native peoples, they were powerless to stop it. Jenness (1932) gives an account of the horrors of this particular item of trade:

"Of shorter duration than diseases, because Europeans finally awoke to the menace, but, while it lasted, almost equally destructive of aboriginal society, was alcohol. The Indians, unlike many other primitive peoples, had no alcoholic beverage in prehistoric times, and from the earliest days of settlement they abandoned every restraint in their frenzy for white man's fire water.

"They do not call it drinking unless they become drunk, and do not think they have been drinking unless they fight and are hurt. However, when they set about drinking, their wives remove from the wigwams the guns,

axes, the mounted swords (spears), the bows, the arrows, and (every weapon) even their knives, which the Indians carry hung from the neck ... Immediately after taking everything with which they can injure themselves, the women carry it into the woods, afar off, where they go to hide with all the children. After that they have a fine time, beating, injuring, and killing one another. Their wives do not return until the next day, when they are sober. At that time the fighting can be done only with the poles of their wigwams, which they pull to pieces to allow this use".

The effect of the fur fashion trade on the way of life of Native peoples, contrary to Herscovici's analysis, was catastrophic; they have yet to recover from it. The fur trade itself with its liquor and European technology, the diseases that destroyed the Native populations and, lastly, Christianity intermeshed and crushed the Indian. The diseases rendered the Indians' control over the supernatural ineffective and destroyed their belief systems. Missionaries seized on the opportunity and substituted the Christian religion and its Man/Nature duality and all the while the fur trade, always the fur trade, drove the Indian further and further from the land and his relationship with animals (Martin 1978).

In 1871 Chief Sweet Grass of the Plains Cree approached His Excellency Governor Archibald at Fort Garry. His petition in part said:

"We heard our lands were sold and we did not like it; we don't want to sell our lands; it is our property, and no one has the right to sell them. "Our country is ruined of fur bearing animals, hitherto our sole support, and now we are poor and want help -- we want you to pity us. We want cattle, tools, agricultural implements, and assistance in everything when we come to settle -- our country is no longer able to support us" (Christie 1871).

2.3 NATIVE PEOPLES TODAY

The Native peoples still bear the legacy of the fur fashion trade and its debilitating effects on their culture. As mentioned before, Jenness (1932) observed that:

"...the Natives became poor, and with difficulty procured the first necessities of life, and in this state they remain, and probably forever."

The Government of Canada has spent billions of dollars to attempt to reverse the damage caused by the fur trade: \$2.2 billion in 1984/5 alone. There are 106 separate programs involving over 7850 person-years annually to deal with Native concerns (Supply and Services Canada 1986). Yet the problems caused by the legacy of the fur fashion trade, from the disease, liquor and Christian missionaries it inflicted on the Native peoples, remain:

1. 52% of aboriginals are under 20 years of age compared with 32% for Canada; 3.5% of the aboriginal population is over 65: the comparable Canadian norm is 10%.
2. 70% of the aboriginal population has less than high school graduation: the national average is 45%.
3. Only 20% of Indian students complete high school: for the rest of Canada the rate is 75%.

4. The participation rates of Indians 14 to 18 years of age in high school is only 30%.
5. The average individual income of Native peoples is only 2/3 of the national average.
6. The second largest source of income for Native peoples is government transfer payments.
7. The rate of single-parent households in Native communities is twice that of the rest of Canada.
8. The number of status Indian children under the protection of a child welfare authority is 5 times the national rate.
9. Nearly 50% of Indian families live in crowded conditions.
10. Less than 50% of Indian houses are fully serviced with sewer and water compared to a national rate of 90%.
11. In 1979, status Indians accounted for 70% of all admissions to provincial and federal penitentiaries in the Prairie provinces.
12. 70% of status Indians can be expected to be jailed by age 25 compared to 8% for the rest of the Canadian population.
13. Most crimes committed by Indians involve drunken driving, theft, and robbery.
14. The juvenile delinquency rate among Indians is 3 times the national average.
15. Indians use hospitals 2 to 2 1/2 times more often than the national population.
16. Accidents, violence, and poisoning account for over 1/3 of all Indian deaths, more than 3 times the national rate. Indian suicide is 6 times the national rate, and worse in the 15-24 age group.
17. Indian infant mortality is 60% higher than the Canadian average and is caused by respiratory diseases, parasitic diseases, and infections brought on by poor housing, lack of sewage disposal, and lack of potable water supplies.

The solutions to these problems are yet to be found; neither the Government of Canada, the provincial governments nor the Native leaders themselves have been successful in the search. It is also misleading for anyone to suggest that the fur fashion industry or any related enterprise is going to have any meaningful beneficial effect on present Native conditions.

In spite of the destruction to their way of life, in spite of the intolerable conditions in which they live today, the Indian still turns to the fur trade and animal-based resources as a form of economic and social salvation. In a recent interview on the Canadian Broadcasting Corporation Susan Inge, president of the North West Territories Native Women's Association, said:

"We would like to pass on to our children the traditions and use of fur which is very much a part of our cultural tradition in the North (Linders 1986)."

Unfortunately, for reasons best known to Susan Inge, what she wants to pass on to Native children was (and still is) an upper-class European tradition that had little to do with Native culture, except to destroy it. Native peoples still continue their over-exploitation of animals and the attitudes nurtured by the hey-days of the fur trade remain for the most part unchanged. Yet with full knowledge of the effect the destruction of wildlife had on their culture and lifestyle they still mount extensive national and international lobbying attempts to promote the continuance of wildlife exploitation.

In a recent discussion paper prepared by the Department of External Affairs about defending the fur fashion trade the following observation is made:

"Government and public officials are frequently hamstrung in public debate because they are expected to present all relevant facts and avoid using them selectively. Even minor discrepancies in factual data or the omission of data that is not readily available will make the government's case suspect and lead to allegations that officials are being dishonest or hiding something" (Anon. 1985).

That observation, as the preceding clearly demonstrates, is not being heeded by fur fashion industry spokesmen, Native leaders, or governments.

2.4 THE RESPONSE OF THE ANIMAL RIGHTS MOVEMENT TO NATIVE PEOPLES

The viewpoint of the animal rights movement towards Native peoples and their exploitation of animal-based resources is not uniform across all animal rights organizations. There is, as in most people, a genuine sympathy for Native peoples and what they are attempting to accomplish under very difficult conditions and social circumstances. This does not distract, however, from the clear understanding that, in terms of wildlife and animals, the Indian has demonstrated he is no better or worse than other groups of people or individuals. What the Native community poses for the political activists in the animal rights movement is just one more political problem. Only time will tell how difficult that problem will be to surmount. A residue of the '60's view of the Indian as an ecological hero still persists. As well, there is a fear that any criticism of Native peoples will result in one's being accused of racism -- a common charge leveled by Native leaders. But there is a trend.

More and more the prevailing attitude -- and anti-fur campaigns are beginning to reflect this -- is found in the understanding that the Indian who lived in harmony with the land and talked with the animals and thought of all living things as other "persons" no longer exists -- that tribe, or tribes, is now extinct. Indeed, it may never have existed. There is no doubt that there is a legacy of the land left by the Indian but it is not embodied in the modern Native community; it is obscured in the anthropological literature and bears little weight in modern Native affairs. So complete was the destruction of the Native culture that, except in self-interest, no Native voice is now raised to defend or protect the animals or the land. In fact, quite the opposite is the case. Deals are made with hydro-electric interests and oil companies. Southern hunters invade the north at the invitation of the Native guiding companies to kill for sport, something the mythology of the Native peoples expressly forbade. And, like their white counter-parts, Native leaders actively pursue development and the exploitation of natural resources.

As to the plight of the Native peoples today and the conditions in which they live? Long before the modern animal rights movement began, the Indian culture had already been devastated by the fur fashion trade, that is undisputable. The International Fur Trade Federation's argument that:

"The anti-fur movement has already invested millions in advertising and direct mail campaigns whose final effect may well also be the destruction of the basis of the existence and culture of Alaskan and Canadian Indians and Inuits" (sic) (Anon. 1985).

is either the epitome of self-serving hypocrisy or an example of unconscionable ignorance.

Criticism has been leveled in the past at the animal rights movement and related organizations for not compensating primary producers for lost markets as if the solution to their problems was somehow possible through the intervention of animal rights organizations. The truth is, and this applies to Newfoundland sealers as well as Native Canadians, that it is unreasonable and foolish for anyone to expect the animal rights movement to correct the four hundred years of entrenched social catastrophe that has so far evaded all solutions in spite of the infusion of billions of dollars; tens of thousands of man-hours of work; the best efforts of countless governments; and the noblest attempts by the Native leaders themselves.

The modern Native community and the Indian traditions that developed under the influence of the fur fashion trade have a lot to teach modern society, as Herscovici (1985) suggests but, it is not how to relate to the environment. If the Indian relationship with nature and the fur fashion trade has given us anything it is a stern and blatant warning of how not to interact with our environment: the Indian communities have paid a crippling price for our education -- a price they continue to pay, for an education we, for the most part, continue to ignore. Jenness (1932) put it like this:

"It is not possible to determine what will be the final influence of the aborigines on the generations of Canadian people still to come. Doubtless all the tribes will disappear. Some will endure only a few years longer, others, like the Eskimo, may last several centuries. Some will merge steadily with the white race, others will bequeath to future generations only an infinitesimal fraction of their blood. Culturally they have already contributed everything that was valuable for our own civilization beyond what knowledge we may still glean from their histories concerning man's ceaseless struggle to control his environment."

3.0 THE ANIMAL RIGHTS MOVEMENT

The animal rights movement is often thought of by those involved in animal-based renewable resource industries as a group of disreputable individuals who have somehow through devious means foisted a false view of the Animal/Man relationship on an unsuspecting and naive public. This sentiment reveals two significant areas of misunderstanding: first of the social and political genesis of social movements and, second, the type of people who support animal rights organizations.

Socio-political movements, the animal rights movement being one, form out of a general sympathy or consciousness that has been brought to the public through some form of media not through the overt efforts of one or two individuals. The manifestations of

movements such as the rise of leaders and the creation of institutions comes long after the need for such things has already been established not before. All a leader of an animal rights movement, or any movement for that matter, can do is organize individuals who already agree with the basic ideals of the movement and channel their concern and support into politically effective programs.

It is wrong to believe that the animal rights movement is in a position to change society or educate large groups of people as to the philosophy of animal rights. The resources are simply not available. But what it can do, and is doing, is organizing the millions of people world-wide who already agree with at least some elements of the animal rights philosophy into a reasonably coherent and, potentially, highly effective political presence.

As for the individuals who support organizations with animal rights leanings, it is probably wrong to assume that they are naive and misinformed about the relationship between human society and the environment and in particular society's relationship with animals. An analysis commissioned in 1983 by the International Fund for Animal Welfare of its Canadian members showed that the most common demographic quality was a university degree. "Educational level is extremely important in explaining the variation in donor penetration patterns. University degree characteristics accounts for the largest percentage in explaining the variation of donor penetration in Metro Toronto (35.0%), Ontario 50,000+ (21.4%), Western 50,000+ (17.0%) and Vancouver/Victoria (28.7%) (Compusearch Market and Social Research Limited 1985)."

In truth, the animal rights movement is evidence of a deep concern held by the most highly educated segment of our society about the relationship between man and animals, in particular, and the environment in general. The rhetoric from the fur fashion industry suggests that the animal rights movement can, somehow, be stopped. If the history of popular movements has anything to teach us, it would seem that it is unlikely that that hope will ever be realized. Even if, through fair means or foul, all of the present animal rights organizations and their leaders were somehow eliminated, the ethics and ideas of the animal rights movement would still exist, and new leaders and new organizations would continue to be created to serve the political needs of those who support the ethic.

3.1 THE ANIMAL RIGHTS MOVEMENT AS AN ADVOCATE OF ANIMALS

Discussions about animal rights center for the most part on philosophy. The pages of *Fur Age Weekly* frequently ridicule and denigrate animal rights ideas and spokesmen, as does Herscovici. This may all be good sport but it serves little purpose particularly if an understanding of the animal rights movement is sought.

The animal rights movement is first and foremost an advocate for animals. The best way to understand this is to think of the movement as a barrister defending a saint or a sinner before the bar. In this case, defending animals before the "bar" of public opinion or the "bar" of a legislature or other governmental forum. The animal rights movement gives animals political "standing", in lieu of the appropriate legal recognition.

There are organizations, conservation organizations, which seek a compromise between man's exploitation of animals and responsible attitudes. These lowest common denominator organizations will tolerate most things happening to animals except their extinction. Organizations involved in the animal rights movement do not accept this view; their task is to represent the interests of the animal or, for that matter, the mountain, the stream, the air, or the tree. Judgment will no doubt be rendered by the public or whoever

or whatever is currently sitting on the appropriate judicial bench. It's not the advocate's role to seek a solution or a compromise; it's the advocate's role to defend.

Government policy is often aimed at trying to seek a balance between the various interests that make up a pluralistic society. There will never be a balance regarding the animal right movement because that is neither what it seeks nor is it consistent with the role it fulfills in the society. Because of this advocate role, it is simply no longer possible to consider an animal-based resource activity without the potential for an associated protest.

3.2 THE ECONOMICS AND FUTURE OF THE ANIMAL RIGHTS MOVEMENT

The economics of philanthropic organizations is universally misunderstood: often by those involved in the organizations as well as by observers. The popular and simplistic opinion is that of donations or gifts being given for charitable purposes in a manner not unlike contributions being placed in a Salvation Army Christmas pot. A more accurate view of the economics of charities and non-profit organizations, and animal rights organizations are no exception, would be that of a service industry. For animal rights organizations the product to be "sold", to continue the analogy, is that of the development and implementation of campaigns and programs for the defense of animals. The size of the product line is determined by the amount of animal abuse that goes on in the world.

Similar to the commercial marketplace, a need is created for a product through promotion. For animal rights organizations this takes the form of creating public awareness of animal abuses through a variety of media. If the public responds to the concerns of the animal rights groups and a significant number of people wish to have the abuse ended, a program for dealing with the issue can be "sold". The interested and concerned people "pay" for the "service" of having the program implemented through donations. As in any business, if the animal rights organization is successful in achieving the goals the "customer" desires by supplying the "service", and correcting the animal abuse the "customer" will continue to "purchase" the organization's "services".

Obviously, to fulfill the services that organizations hope to supply, overhead, trained staff, and an infrastructure is required. These financial obligations and responsibilities mean that organizations are economically as well as philosophically compelled to seek out new "products" or issues to offer to the public and their supporters. Furthermore, all animal rights organization are in competition with each other for a larger share of the donor base and experience has shown that the public is more likely to respond to more radical and extreme positions than conservative ones. For the animal-based resource industries the implications of this are clear because they are the source of issues that the animal rights organizations use and need.

The profile of animal rights organizations is changing rapidly. As membership bases increase and income rises, organizations are discovering they can attract a higher quality of employee: a professional animal rights activist. The old idea of animal rights organizations being a hodge-podge of volunteer radicals is becoming less and less accurate as the needs and resources of the organizations require and permit more sophisticated techniques and more qualified personnel. It is now possible to pursue a career in the animal rights movement. Today, the animal rights movement, indeed the entire environmental/ecology movement, is in every sense of the word, an industry in its own right; no less than any other.

3.3 THE EFFECTS OF THE ANIMAL RIGHTS MOVEMENT ON RENEWABLE RESOURCE INDUSTRIES

For those involved in the development of animal-based renewable resource industries, either directly or indirectly, it would be imprudent to proceed without taking into account the potential effects of the animal rights movement on their enterprises. It must first be appreciated that the animal rights movement has become a permanent fixture in the political and economic environment and has the potential for having an effect to some degree on whatever animal products are to be marketed. It should also be understood that the "services" of the animal rights movement are in greater and greater demand. Whereas the more middle of the road organizations are experiencing little or no growth and in some cases declines, organizations with more extreme views are enjoying rapid expansion. This is probably a function of a growing public sentiment towards work being done to protect animals as opposed to conserving them. Because of this, conservative organizations such as the World Wildlife Fund and the Sierra Club in the United States are reappraising their positions on various issues. The Royal Society for the Prevention of Cruelty to Animals in the United Kingdom, once a bastion of conservatism, for economic reasons has had to take a more extreme stand to attract donors; hence its involvement in the seal issue and the fur fashion industry.

The activities of the animal welfare movement have had and will continue to have a detrimental effect on the animal-based resource industries; the final degree of the effect remains to be seen and is currently open to speculation. For lobbyists promoting the use of animal products, including governments, a further problem arises because many animal-based products are fashion oriented: they suffer or thrive on the whims of the marketplace. Although recent documents from the Department of External Affairs (Government of Canada 1985) suggest that a program can be launched to counter the animal rights movement, in the case of the fur fashion industry at any rate, this is probably not possible.

The pros and cons of wearing fur are probably irrelevant because it is a fashion product. All that is relevant is whether or not a protest exists at all. As well it is reasonable to assume that because of the frivolous nature of the product and the purpose it is to serve (i.e., displaying status) any associated protest will tend to diminish the desirability of the product. The corollary to this is that any action taken to promote furs or counter the animal rights movement's programs will inevitably increase the public awareness of the issue and the associated protest and may, rather than ameliorate the effects of the protest, result in fewer sales or reduction in prices. The seal issue proved that the more vocal and vociferous the proponents of animal exploitation become, the easier it is to attract supporters to the organizations working to end animal abuse.

4.0 CONCLUSIONS

For the commercial interests involved in the fur trade and other animal-based resource industries, the presence of the animal rights movement portends higher costs in countering animal rights activities, the need for increased promotion and advertising to maintain sales, and decreases in sales and/or prices. The result of declining prices and increasing overhead is, of course, lower profit margins if not losses. It would be short-sighted indeed, when preparing financial analyses and cashflow projections, for managers to ignore the political environment that exists in the marketplace.

For governments, some difficult decisions need to be made or, as in the case of the Canadian seal hunt, ignored as political expedience dictates. Are they to continue to promote the exploitation of animal resources and encourage economic dependence upon

them knowing that the future of such enterprises is less than secure? Is it reasonable to plan for animal-based enterprises playing a meaningful role in the development of a self-supporting Native economy given the growing presence and effectiveness of animal rights organizations?

For the Native community and their leaders the decisions to be made are even more profound because they require a revaluation of their "culture". Their choice is between their current European-influenced culture and its legacy of despair or seeking their true culture in the past before they were devastated by the fur trade, disease, and Christianity and adapting it, if possible, to the twentieth and twenty-first century. As well, due to the nature of the argument the animal rights movement is offering to counter fur fashion industry and Native claims regarding the benefits of trapping and Native "respect" for wildlife. Native involvement in the fur fashion issue may have undesirable and detrimental effects on the level of public support and credibility they now enjoy to some extent in regards to other concerns, most notably: land claims. (It has been suggested that the reason for Native promotion of trapping and hunting is based for the most part in maintaining a presence on disputed lands for purposes of retaining legal territorial claims and has little to do with the economic potential of animal-based resources or culture; there is no doubt that greater economic benefits are to be gained in non-renewable resources.)

For the animal rights movement the pity is that the Native community continues to align itself with the forces that destroy animals rather than the forces that protect them. There is no doubt that an entirely Indian-based animal rights organization, applying modern management skills, would be eminently successful and would have a significant effect on the efforts being put forth to defend the living entities of this planet.

If present trends continue, and considering the overwhelming inertia inherent in political and social movements it is almost certain they will, the fur fashion industry and other animal abuse issues found within renewable resource industries will develop similarly to the seal hunt issue. The industries will likely begin to experience economic stagnation which will be followed by precipitous economic declines. During the campaign process, the better managed animal rights groups will experience large increases in supporters and income -- all of which will be used to deal with future issues and increase efficiency and effectiveness.

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CONSERVATION AS SOCIAL PHILOSOPHY: MANAGEMENT LESSONS FROM THE "ANIMAL-RIGHTS" ANTI-HARVEST CAMPAIGNS

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***ABSTRACT:** In the 1960's, world attention was drawn to the northwest Atlantic harp-seal hunt. Conservationists sought regulations to prevent over-hunting, while animal-welfare groups complained that killing methods were often cruel. The introduction of Canadian and international regulations, however, failed to quell the protests. Instead, the 1970's saw the emergence of a radically new "animal-rights" doctrine: the notion that man has no moral right to use animals at all, no matter how "humanely" or "scientifically". The far-reaching implications of this shift from "ecology" and "animal-welfare" to animal-rights has yet to be understood by many in the scientific community. The "new-breed" of animal protectionist has indeed succeeded in attracting public and media attention to wildlife issues. It is far less clear whether their campaigns against sealing, and now the fur-trade, have really contributed to a more sophisticated public appreciation of the complexity of our present environmental dilemma (e.g., the relentless erosion of habitat caused by constantly increasing human population, urbanization, industry and agriculture). The controversy about wildlife management and use reflects, in part, the gap which has opened between the biological and social sciences. This is the gap scientists, and others, must now strive to bridge -- in order to play a constructive role in issues which go far beyond wildlife conservation.*

1.0 INTRODUCTION

In 1964, there began a series of well-publicized protests which, within twenty years, resulted in the total collapse of the Canadian commercial sealing industry. Sealers in Arctic Inuit communities and in outport Newfoundland awoke to find they no longer had markets for their products.

Through the twenty-year protest campaign, it became apparent that there had been a shift away from traditional concerns with conservation and animal-welfare, to something quite different.

In the early 1960's, the northwest Atlantic harp-seal hunt attracted the attention of conservationists who feared that, with increasingly efficient technology and few controls, the seals would be drastically over-harvested. Animal welfare proponents, meanwhile, argued that the methods used to kill the seals were often cruel.

The introduction of Canadian and international regulations and monitoring by the end of the decade, however, failed to stem the protests. Instead, the 1970's saw the emergence of a "new breed" of more radical protester who specialized in orchestrating dramatic confrontations that the media couldn't resist -- and argued that seals shouldn't be killed at all, no matter how "humanely" or "scientifically" this was done.

As Patrick Moore, of Greenpeace, told me: "It wasn't a question of science or economics ... it was simply a question of morality".

The ideological underpinning for this position was the development of a far-reaching "animal-rights" doctrine.¹ Briefly put, this doctrine states that, at least since Darwin showed that we are all part of the same biological stock -- that we are on an unbroken continuum with the rest of the animal kingdom -- we have no moral or philosophical right to treat animals in any way we wouldn't treat another human being.

From this it follows that "animal rights" opposes not only sealing and fur-trapping, but also the use of animals for medical or scientific research; the raising of livestock for food; rodeos, zoos, aquariums and circuses; and in some cases, even the keeping of pets.

It should be very clearly understood: animal-rights is not the same as animal-welfare. Although charges of "cruelty" come up continuously in the current campaigns against animal-use of any kind, the concept of "animal rights" goes far beyond this. As the philosopher Roslind Godlovitch has written, I do not accord you the right to kill me, even if you sneak up and do the deed painlessly, while I sleep.

Nor does "animal rights" have much to do with conservation of wildlife populations. So, for example, although concern was often expressed in anti-sealing publications about the possible extinction of seal populations, there was no harvesting quota which would have satisfied the protesters.

Reporting to the European Parliament on the question of whether the sealskin import ban should be continued after 1985, Committee Chairman Muntingh stated:

"The hunting of baby seals is unethical, immoral and cruel, and always will be so... The slaughter of wild animals for no other reason than the manufacture of luxury goods is, and will always remain, unacceptable..."

From an animal-rights perspective, however -- to a vegetarian -- the meat-eating habits of most Europeans must also be considered a "luxury", unnecessary, and therefore immoral. This, Chairman Muntingh omitted to mention in his passionate (and successful) appeal for renewal of the EEC ban on Canada's immoral seal products.

The shift from traditional concerns with conservation and animal-welfare, to a radical animal-rights doctrine, has far-reaching implications which, I believe, have yet to be fully appreciated, not only by the European Parliament, but also by many in the scientific community.

There is no doubt that the "new breed" of animal-rights protesters has succeeded in attracting considerable public and media attention to wildlife issues. In some cases, this may have facilitated the introduction of conservation legislation or controls. It is far less clear, however, whether the widely-publicized campaigns against sealing, or the current campaigns against fur-trapping and ranching, have really contributed to a more sophisticated public understanding of our present environmental dilemma.

¹ Expressed as early as 1894 by social reformer Henry Salt in his book, Animals' Rights; a more recent exponent in Peter Sing (Animal Liberation)

The main threat to wildlife today, as I understand it, is the relentless erosion of habitat (and the environment upon which we all ultimately depend) as a result of constantly increasing human population, urbanization, industry and intensive agriculture. Animal-rights campaigns, however, are restricted to narrow-focus attacks on specific wildlife-user groups. They fail to consider the role of these users within a complete eco-system. And they fail to appreciate that the alternative uses to which land may be put are likely to be far less compatible with the needs of wildlife than are the activities of trappers, sports hunters and fishermen, or subsistence-oriented Native economics.

Wildlife management (or the management of the use of wildlife) does not operate in a social vacuum. Science may or may not be "pure", but the application of science never is. For this reason, I believe it is important for the scientific community to understand the implications of the increasingly influential "animal-rights" doctrine, and the impact which it can have on the public perception of wildlife issues.

Perhaps because I am a political scientist by training, at this time I would like to present a qualitative model, borrowed from psychology, which I believe provides some insight into (1) the impact animal-rights campaigns against sealing had on the public imagination; (2) the likely impact of the present campaigns against the fur-trade; and (3) the position which the scientific community should take in this debate.

In a June 1979 issue of Psychology Today, Ralph L. Rosnow and Alan J. Kimmel wrote, in an article entitled "Lives of a Rumor":

"Even frivolous-seeming rumors do not take root simply because they make titilating gossip. They persist because they touch on the real uncertainties and anxieties of the times."

The fact that the debate over sealing has captured more media and public attention over the past twenty years than any other single animal "issue", certainly suggests that it touched on "real uncertainties and anxieties of the times."

Rosnow and Kimmel, define "rumor" as "a story in general circulation without certainty as to its truth." They suggest that because "perceptions strive towards simplicity, order, and a feeling of closure (completion) ... the number of rumors will vary according to an incident's thematic importance and the amount of ambiguity inherent in a given situation." They add that "...emotional arousal is crucial to the survival of rumors," and that "...since rumours explain confusing events and relieve the tension of ambiguity, they flourish in an atmosphere of secrecy and competition." And finally, "Our anxieties interact with wants and expectations that are ripe for the endurance of rumors, which now circulate faster than ever before, carried by radio and television... the efficiency of the news media has produced an expansive rumor mill that can either bring people closer together, or heighten their anxieties."

Thematic importance, uncertainty about the facts, emotional arousal, a climate of secrecy and competition, and the dominant role of the media -- it would be difficult to summarize more succinctly the climate surrounding the debate over sealing.

2.0 THEMATIC IMPORTANCE

Why has sealing become the dominant animal "issue" of our time? Sport-hunting, livestock raising, laboratory science -- all of these use far more animals, and arguably

involve more "cruelty". All have been targets of protest campaigns, but none to date has generated the same level of public response as did the sealing protests.

Some "tactical" reasons could be suggested: Sealing has been portrayed as benefiting only very few people, but it is heavily export-oriented, and thus could be attacked in the consumer marketplace; the hunt was extremely localized, in time and space, providing a convenient "package" for the media; the victims were attractive "baby" animals.

A somewhat deeper explanation would be that sealing has been "marketed" by the protest groups as symbolic of a whole gamut of animal "exploitation", and as a focus for a new questioning of industrial society's relationship with Nature -- and perhaps even Mankind's very survival. Brian Davies, founder of the International Fund for Animal Welfare (IFAW), wrote in his book, Savage Luxury (1970):

"I see the seal issue as representing a showdown for wildlife. These animals are symbolic, and if they can't be saved, it is probably not ever going to be possible to save any substantial population of wild creatures. The world will gradually fill with filth, and one day, empty of all but man, this planet will become the loneliest place in the universe. Perhaps in saving the seals, man may save himself."

The apocalyptic tone is not irrelevant. Rosnow and Kimmel, in their article, point out that the most persistent "rumors" go beyond short-term preoccupations, to touch on more profound themes. For example, "Jung saw tales of flying saucers as visionary rumors founded on an emotional tension -- collective distress over the world situation -- together with an unconscious wish for a redeeming supernatural force that could allay our fears." Rosnow and Kimmel continue:

"Certain other ancient rumors can also be interpreted as reflections of archetypal images. The death of innocents, an idea culturally transmitted from one generation to another, is a persistent theme in folklore and legend..."

Greenpeace was founded in 1971, to protest nuclear testing and the environmental apocalypse it might bring with it. They joined the anti-sealing protests only in 1976, after a two-year "Save the Whale" campaign. Whales, like harp-seal pups, are "white", generally associated in mythology and legend with "innocence". Robert Hunter, President of Greenpeace during the sealing campaign, wrote about the whaling protests:

"There hadn't been much to celebrate so long as we were opposing bombs... But now, instead of fighting death, we were embracing life. It was not just that we wanted to save the whales; we wanted to meet them, to engage them, touch them. For the first time there was a transcendental element lying at the center of the undertaking. There was a Holy Grail."

Again, as Patrick Moore told me in a recorded interview for my radio series on CBC's IDLAS:

"What the seal hunt represented was the paramount focus for public attention on the need to change our basic attitude and relationship to nature and to the species that make it up..."

3.0 UNCERTAINTY ABOUT THE FACTS

It is truly extraordinary, after twenty years of unprecedented media coverage, how little real information about the seal hunt was actually received or retained by the general public. Recent polls have shown that more people are concerned about seals than about any other animal "issue". Very few people, however, were able to name a single species of seal; to estimate how many seals there were in Canadian waters; or to say whether the low levels of hunting in 1983 and 1984 would result in an increase or diminution of seal stocks. A significant proportion still thought that harp-seals were an endangered species.

The confusion on the public mind is hardly surprising, considering the considerable debate which still continues even within the scientific community. The remote location of the seal hunt has meant that the public is dependent upon the pronouncements of various "experts" and "spokespeople". The Canadian government has held up reports by ICES and NAFO to support their claim that harvesting quotas have allowed seal stocks to rise. But the recent Royal Commission on Sealing heard equally respected scientists, like Dr. Sidney Holt and Dr. David Lavigne, argue that there is no proof the management regime has been effective. Dr. Holt, vice-chairman of the IUCN, testified:

"...with all the mathematical modelling, all the observation and inquiry, we are not only left with a great deal of uncertainty and ignorance, that in itself would be bad enough, but we are left with a great deal of confusion because of the ways in which these data have been discussed over the years."

There is hardly a single "fact" about the seal hunt which hasn't been subject of intense dispute and confusion. In 1983/84, when harvesting quotas in Canada had been in the 180-200 thousand range for years, Greenpeace (USA) mail-outs were claiming that "Hunters kill 300,000 baby seals every year."

Dr. David Sergeant told me recently that he estimates there are now somewhere around two million harp seals in the northwest Atlantic, which he believes is approaching primeval levels. A Fund for Animals pamphlet was charging, in 1979, however:

"Something must be done to protect the remaining populations from being totally destroyed. In the early 1940's there were more than 10 million seals in the region; now there are only a little over a million."

A colour flyer issued by the Foundation Franz Weber (undated), states:

"Of the once enormous 35 million Arctic seal population, only one million now survive....In less than ten years the harp seals will become extinct. Preventing this extinction is the goal of the Franz Weber Foundation..."

Franz Weber is the man who brought Brigitte Bardot to the seal hunt, in 1977, and who proposed that sealers should set up a toy factory to manufacture fake-fur.

These examples could be multiplied endlessly. Beneath the numbers, however, there is a more fundamental confusion about concepts. As mentioned earlier: sometimes it appears that what is being criticized is the accuracy of the management regime. In the end, however, it was not more research or tighter quotas, but a total cessation of sealing which was being called for. The disputes about numbers obscure the emerging animal-rights ideology of the protest groups.

Other disputes raged endlessly: about the amount of money actually earned by those engaged in sealing; the importance of this income for the people concerned; the amount of fish consumed by seals and whether this was a reason requiring that seals be "culled", whether or not there was a market for their pelts; and so on. Most of these disputes continue, and many have been well documented in testimony presented last year before the Royal Commission on Sealing.

4.0 EMOTIONAL AROUSAL

This aspect of the debate over sealing is so obvious that it requires little elaboration. The main elements are that a large number of "baby" seals were being killed; that the method of killing was "clubbing"; and the charge that seals were "skinned alive". I have gone into each of these in some detail in my book, *SECOND NATURE*. Suffice it here to give a few examples of the type of language which has been employed.

The "rumor" that pups were being "skinned alive" was first aired in a documentary made by Artek Films and broadcast on the CBC television network, in 1964. The rumor soon crossed the Atlantic, thanks to a series of articles by Montreal journalist Peter Lust, who had seen the Artek film, although apparently he hadn't been to the hunt himself. In an article titled "Murder Islands", he wrote:

"Terror stalks the island...Tiny bloodstained beings scream their death cries into the air...Are they killing people? The horrible wails would indicate it. Actually, they are murdering tiny innocent, helpless babies...They are baby seals. A group of humans who have lost all semblance of humanity skin these poor helpless animals while they are still alive..."

The tone changed very little through the years. During the IFAW "fish boycott" campaign in Britain, a tabloid-style newspaper ("Times for Changes") was produced. Under the headline, "The Hunt Without Pity...The Hunt Without Sense" (1983/84):

"The men without compassion, the men with hardened hearts will be on the ice this coming Spring, with greed their only commandment. In March, the hard-hearted fishermen of Newfoundland will arm themselves with nets, guns and picks ... there will be no compassion as the animals are drowned agonizingly..."

... the hunters often drive a hook through the skull and drag the writhing creatures to a convenient spot for killing. Sometimes the pups are ruthlessly skinned while they are still alive -- a fact that has been admitted by the Canadian Department of Fisheries and Oceans..."

Finally, during the campaign for renewal of the EEC ban in the Fall of 1985, Brian Davies warned his followers in a newsletter that unless the ban was renewed,

"...Many more frightened baby seals, of some ten days of age, (some crying pitifully) will be separated from their mothers and brutally beaten over the head..."

...bleeding from the nose and mouth, (they will be) rolled over onto their backs to have their skins ripped from still trembling bodies...some will be skinned alive!"

It should be noted that Davies is not claiming here (as he did in his reports of sealing in the 1960's) that seals are being skinned while they are still conscious. Nor does he mention that any seals not killed by the mandatory three blows to the head will die as the hunter's first knife thrusts cut the main arteries between the front flippers. What is important is the emotional impact of the statement.

5.0 SECRECY AND COMPETITION

From the start, the sealing controversy was complicated by the fact that each side accused the other of misrepresenting the facts of the hunt. Over the years in fact, these charges and counter-charges have virtually overshadowed the hunt itself. Canadian government officials claimed that some scenes in anti-sealing films had been "staged"; protesters countered that the government made arbitrary use of its power to exclude opponents from the sealing grounds, through legislation like the Seal Protection Acts.

Canadians Against the Seal Hunt (CASH) presented a brief to the Royal Commission on Sealing entitled, "Deception of the Canadian Public and the News Media on Matters Related to Sealing--Through False and Misleading Statements from Government Officials and Others Using Public Funds."

Farley Mowatt, in his book Sea of Slaughter (1984), argues that the Department of Fisheries was, in fact, pursuing a "covert policy" designed "to reduce all species of seals inhabiting commercial fishing waters to relic levels."

Such charges and counter-charges helped keep the seal story in the media spotlight. They also perpetuated a situation of uncertainty: "my expert is as good as your expert." With intellectual arguments neutralized by a fog of uncertainty and distrust, the visual images of attractive young animals being clubbed were left to occupy center stage.

6.0 DOMINANT RULE OF THE MEDIA

Television, increasingly, is geared to fast-paced, simple statements. Simple solutions. If you have a headache, take Bufferin. If you want to stop suffering, stop the seal hunt. A seal pup clubbed, blood on the ice: that's television. Lengthy explanations of sustainable yields and threats to habitat are not. TV wants quick solutions; three minute clips. Unfortunately, there are no "quick" or "simple" solutions for most of our present environmental problems.

Another sort of media has had an extremely important influence on this debate: the increasing importance of computers, especially as a tool for generating mailing lists and controlling direct-mail campaigns. Before computers, a blanket-mailing on a particular issue brought in relatively few returns. It didn't pay. Today, however, computers can identify the people who give donations: supporters can be identified by age-group and geographic location; the computer shows who gave money for which issues, when, and how much. Dan Morast, in an interview with the Cape Cod Business Journal (June 1984), stated that IFAW's revenues soared with the introduction of computer-assisted direct-mailing.

Computers also allow protest groups to call up petitions and letter-writing campaigns, which give these movements a high media profile and political clout far beyond their actual numbers.

Media is certainly the key to the anti-sealing campaigns. Programs like IFAW's "fish boycotts" do not appear either to have moved the Canadian government to change policies or to have reduced Canadian fish sales. The campaigns did, however, keep the IFAW on television and in the print media. And, perhaps most important, they provided a continuing drama to be reported in a stream of newsletters to IFAW supporters -- accompanied by an appeal for more funds.

What insights, then, does our model provide into the workings of the anti-sealing campaigns? It appears that the campaigns tapped into deep public concern about the state of the natural environment, the threat of nuclear catastrophe, and perhaps even such problems as abortion and birth control. As one psychologist pointed out to me, the seal pup is virtually an archetype for the "infant" -- with its large head and eyes, short members and rounded forms.

We live in an age when most of our social and environmental problems are recognized to be extremely complex -- complexity which was underlined by the disputes about facts and the atmosphere of secrecy and competition which permeated the sealing controversy itself. In this climate of uncertainty, the anti-sealing protests offered an apparently "simple" solution -- "stop the hunt."

This simplification of issues, combined with the emotional power of the image of seal pups being clubbed, provided a message that was perfectly adapted to the society's dominant medium. Fashion models and the clubbing of seals -- sex and violence -- the stuff we all know television's made of.

In the end, this combination of factors was sufficient to persuade a large part of the population to oppose sealing -- or at least, not to support it. Because, after all, it should be remembered that the vote to renew the sealskin ban in October 1985 was 55 to nil. But the total voting membership of the European Parliament is 435.

Groups which generated a large part of their revenue from the anti-sealing protests must now find another issue which can stimulate a similar level of public interest. Laboratory science and factory farming are by far the greatest users of animals, and animal-rights campaigns have been directed against them. But many of those who endorsed, or at least tolerated the decimation of the sealing industry, are likely to be more cautious when it comes to giving up the perceived benefits of a steady supply of miracle drugs and B.B.Q chickens.

The fur-trade, on the other hand, has much in common with the sealing industry: trappers, like sealers, live far from the centers of influence and media; the Canadian trade is heavily export-oriented, and thus can be attached far away from where anyone knows, or cares much about the people directly involved; the trade can be caricatured as a "luxury" trade, which no one really "needs" anymore. And so, one after another, animal-rights groups are moving onto the anti-fur bandwagon.

In Britain, the radical fringe is represented by the Animal Liberation Front. They've smashed fur store windows, thrown fire-bombs, and attacked fur-ranches. Spokesman Ron Lee warns unabashedly:

"There will be injuries and possibly death on both sides before our ultimate victory for animal liberation is achieved..."

"...Winning people over to the cause through reasoned argument is NOT the aim of ALF. Our purpose is to take direct action to liberate abused animals..."

Lee claims to have 1,500 militants in their early twenties who are prepared to go to prison for their cause:

"They are quite anarchistic and free to carry out attacks against whatever kind of animal abuse they see fit. There are no priorities. The priority is all of it..."

ALF's anti-social violence no doubt alienates more people than it attracts. But it does serve to keep "animal rights" in the media spotlight.

More significant, perhaps, is the fact that the traditionally moderate RSPCA has launched a major anti-fur campaign, with mailings to over one million British households, ad campaigns, and the slogan: "When you stop buying, they'll stop dying."

Greenpeace withdrew their anti-fur campaign, following charges by the Canadian wing of Indigenous Survival International that destruction of the market for furs would condemn many Native communities to "slow cultural genocide." But several of the organizers of the Greenpeace (UK) campaign simply set up a new organization -- LYNX -- and have continued to use the posters and television commercials developed for Greenpeace, almost without missing a beat.

The signal that the US anti-fur campaign was moving into high gear was given December 15, 1985 declared "National Anti-fur Day". Some seven hundred demonstrators in twenty US cities staged sit-downs in the fur salons of department stores -- calling on the stores to stop selling furs. Cleveland Amory, of the Fund for Animals, told reporters:

"It was a very good "opening gun" picket, and it's the first of many. If the furriers take comfort in the fact that the numbers were small, tell them they ain't seen nothing yet!"

The pattern which is developing in the anti-fur campaigns is very familiar for anyone who has watched the protests against sealing. Anti-fur pamphlets charge that trapping methods are cruel; that traps are "unselective" and take many animals not even used by the fur trade, including endangered species and pets; they claim that up to three-quarters of the animals taken are "non-target" species; that one-animal-in-four chews through its paws to escape the leghold trap; that very few people depend on trapping income anymore; that most are "weekend" or recreational trappers. A flyer I picked up recently from an anti-fur demonstration in New York City charges that Canadian lynx are "finished off in the trap with a red-hot piker in the anus -- so as not to damage the costly pelt," and that, "sables are trapped when their tongues freeze to a baited metal sheet."

What is important here, I believe, is not so much the long list of outrageous inaccuracies and misleading statements which are now being made about the fur-trade. The point is that such charges, if repeated often enough, without authoritative rebuttal, will be accepted by the public as "truth".

There are indications, moreover, that some animal-rights advocates, at least, are quite conscious of the public's (if not their own) lack of knowledge about the fur-trade. Recently, I was invited to participate in a televised debate in Boston, with Richard Adams, author of Watership Down and a spokesman for "Lynx", the group which has taken over

Greenpeace's anti-fur campaigns. Later, we were interviewed by a Boston Globe reporter, in a quiet room, with a tape recorder, free of the severe time restraints imposed by television.

Adams repeated for the journalist the same patter he had used on TV: the fur-trade was cruel and barbaric; the goal was to eliminate the consumer market for furs by the year 2020; Lady Di, "our future Queen", had already foresworn the use of furs...

When I pointed out that eliminating trapping would do nothing to slow the destruction of habitat, the main threat to wildlife, he had no answer. In fact, after refusing to address any of the specific questions about the fur-trade I raised, he abruptly left the room and the building. (Reported in the Boston Globe, 17 April 1986).

The next day, moreover, in New York City, Adams refused categorically to go on a television set with me, although this had been scheduled weeks in advance.

Mr. Adams appears to have made what he considered to be a shrewd decision: why risk going on the air with someone who might contradict his assertions that, for example, mink are driven "insane" within two days by the conditions on fur ranches? (Mr. Adams also informed the New York producer that I was "insane", although the producer failed to see why that should be any impediment to appearing on television.)

The point is that Adams, as a "celebrity", was assured the possibility of speaking on many radio and TV programs during his US tour -- without the inconvenience of someone there to question his information.

On the other hand, the New York producer would not let me be interviewed alone that day -- despite the fact that it was Mr. Adams who had backed out of the arrangement. Instead, the taping was delayed until Cleveland Armory (the old war-horse of the US animal-rights movement) could be rushed cross-town to stand-in for the suddenly camera-shy British campaigner.

The New York producer had also made a "shrewd" decision: he feared that if he let a "pro-fur" advocate be interviewed alone, he would be bombarded by phone calls and letters from animal-rights supporters. And that is a clear measure of the job which trappers and others involved in the fur industry now have before them.

Anti-fur activists today portray themselves as the sole guardians of wildlife. Their pamphlets and chants proclaim: "We speak for the animals." The model I have presented of the sealing campaigns suggests that if this claim is allowed to stand unchallenged, it is to be expected that anti-fur campaigns will gain considerable public acceptance.

Everyone today knows that we are faced with frightening environmental problems. Animal-rights claims to offer a "solution". If scientists and others involved with the use of wildlife take issue with that "solution", they had better take steps to ensure that their voice is heard in the public forum.

Most people in this society, I am convinced, still accept the use of animals, including wildlife, so long as (1) use is controlled, so that species are not over-exploited, and (2) every effort is made to ensure that the most humane methods available are used. In the case of the fur-trade, as most of you know, many advances have already been made in these two areas, and more work is in progress. Canada's humane-trap research program, for example, the most advanced in the world, is being directed at Vegreville, near Edmonton.

There is a definite danger today, however, of extreme polarization, which will make further advances more difficult. Here is an example of the rhetoric of the British anti-fur campaign, from a recent issue of Animal Liberation Front Magazine:

"These obscene garments are being flaunted by perverts who deserve all the hassle we can give them. Spitting and verbal assault are very effective and, gradually, these cretins will begin to expect trouble each time they step out in their "stolen" coats. A careful squirt of battery acid from a syringe on the back of the coat will have the desired effect. Unlike paint, it is not immediately noticeable, but will shortly leave a large bald patch."

Or again, here in Canada, Ms. Vicki Miller, of ARK II, and president of the Toronto Humane Society, wrote in a recent issue of Animals' Agenda:

"I believe this decade will see the first acts of true violence. Some may be accidental -- like a bystander killed in a bomb blast; some will be deliberate - like a vivisector shot in the street."

We should not be shocked by this language, because it follows logically from the "animal-rights" doctrine. Once we accept that no moral distinction should be made between humans and other animals, it follows that every effort should be made to halt the use of animals in ways which would be unacceptable for other humans. This was the judgement of Nuremberg.

The animal-rights philosophy also leads directly to opinions like those expressed by a recent letter-writer to Animals' Agenda, (March 1986) concerning the importance of the fur-trade to Native people:

"...these "traditional ways of life" (should be) shown for what they really are -- anachronisms blocking progress toward more humane standards...The war on nature must be slowed down."

At the heart of this issue, in other words, is the doctrine of "animal rights". It is, I believe, ultimately an empty doctrine. As Albert Schweitzer pointed out many years ago, in his analysis of the Hindu concept of "Ahimsa", the call to harm or kill no living creature is not a solution to our moral dilemma, but an attempt to pretend that there is no dilemma. As Gandhi argued, there is nothing morally praiseworthy about refusing to kill a cow, when there is no food for it. Similarly, I would argue that there is nothing admirable about eliminating the livelihoods of people who trap and hunt, when in fact wildlife is endangered by the lifestyles of city-dwellers, whose pollution, industrial wastes and intensive agriculture are whittling away the remaining habitat.

The danger is that today the concepts of conservation and animal-welfare are blurred with those of "animal rights". This is hardly surprising. Animal-rights advocates often do not appear to understand the distinctions themselves. I believe that it is important for the scientific community to begin to understand these distinctions, however, so that they can begin to clarify these distinctions for the public. The general confusion about these concepts is today, I believe, a serious obstacle to rational discussion.

Scientists have a particularly important role to play in this debate. Unfortunately, many scientists tend to shy away from public debate. Or they feel constrained from doing so, because they are employed by government departments. But if scientists do not find a

way to express their opinions on these issues, they should not be surprised to find that there are others who are only too ready to fill the information vacuum they are leaving.

Paul-Henri Spaak, the Belgian statesman and first President of the U.N. General Assembly, once wrote:

"Who wills certain things also wills their consequences; if he does not like the consequences, he should oppose the things from which they originate."

I believe that it is important that the scientific community not abandon by default the leadership role they should be playing in coming to terms with our present environmental problems. In brief, "animal rights" doesn't provide any answers to our environmental dilemma; but it poses questions which the scientific community will ignore only at its own -- and the society's -- peril.

To end, two quotes. The first is from Brian Davies: (Weekend Magazine, 29 May 1976):

"If you too deeply search your own motives, then you become confused and start questioning them -- and you can't afford to question them if you are dedicated to an end. If you have decided, "I want to end the seal hunt," don't bother digging into yourself and trying to find out why. Just go out and do it."

The final quote, which expresses quite a different attitude, is from Dr. Albert Schweitzer:

"When we experience the conflicts ever more deeply, we are living in truth. The quiet conscience is an invention of the devil."

THE TRAPPERS' VIEWPOINT¹

Jim Bourque
Deputy Minister

Northwest Territories Department of Renewable Resources

I am pleased to have the opportunity to participate in this panel although it is at very short notice. I will not take too much of your time. I would like to relay a couple of stories in my life as a trapper, as a person that would born on a trapline, raised in a log cabin with a wood floor and maybe this will put some of the statements of Mr. Best in context.

Most of my experience is gained from practical experience. I have not even got a high school diploma and I suspect that there are millions of people in Canada with the same sort of the background that are in the same sort of situation that I am in, whether it be the Native people, the Metis people or whatever. I would like to relate to you one of the first and earliest things I remember. I remember riding in a dog wagon wrapped in an eiderdown at about 2 o'clock in the morning, the stars bright in the eye of the moon, while my father was setting rat traps on the first of March. To lay aside the myth that all Indian and Metis people are lazy and drunks this is the kind of upbringing I had. And it was a very good upbringing because there was alot of love in the family, and my father was independent. He was a trapper. He trapped all his life until he was 79 years old, and he made a good living out of it. He did not have to beg, or bend before any man.

And I want to tell you clearly that in my family, I will teach my kids how to trap and lead my way of life. And I hope that they teach their kids to do so. Not indiscriminately, because I think that is a strong component of the issues of conservation. Because we depend on them, our standard, our bottom line, is that they harvest in a sustained manner. If we laid a trap line we had to make sure that there were animals left to reproduce yet still trap enough to have a living the next year.

I want to relate another story. I was sitting in a boat with a good friend of mine, Peter Green, and he invited me to go out on a seal hunt because we were running out of cash. We were sitting in the bay and he had taken four seals that day and he said well now its time to have lunch. I said well Peter, why don't you go after seals really hard and in thirty or forty years make that pile of money. He said to me, you know Jim, money is no good to me sitting in the bank in Inuvik. If I get two seals today or whatever, I'll take it to the Co-Op and it means I don't owe the Co-Op any money. And I'll be able to buy some milk for my kids and that's important. I don't need a deep freeze or a refrigerator, or walk in freezer -- those hills in the background, they are my warehouse. When I need a caribou, I'll get one and bring him down. Now that eliminates in many cases, the myth that many Inuit and Indians kill game indiscriminately. That myth is just not true.

Now, another statement I would like to make since I don't go into name calling. But I have heard man, many papers over the years similar to what you just presented, Mr. Best -- only on different topics and usually written by six week wonders that come to the Northwest Territories amongst the Indian and Inuit people and decide how it is they should live and what they are doing wrong. We take them for a joke! Here comes another six week wonder trying to analyse us. We are analysed to death. That was one of the first

¹ Based on a transcription of the taped Symposium Proceedings.

things you did today, and as far as the paper that was presented here today, that was not a joke. What Mr. Best is talking about, you like to laugh at and probably make fun of. But this is serious, and I think it is about time the Canadian people realize that. I think there is going to be an awful long struggle to help people out across Canada.

There is another side to the story. I can't believe that Canadians, all across Canada, are that naive that they are going to believe that kind of garbage. But I still believe and have faith in Canada and I think we will come to understand what reality is.

QUESTION AND ANSWER PERIOD

Harvey Feit:

Question for Steven Best. With regard to Samuel Hearn, John Dunn and Diamond Geness, I would suggest that those comments and quotes are similar to those that Alan read from the fur brochure or anti-fur brochure in New York. They are taken out of context. They are made by agents of a colonial power who had the same reason to disabuse or change the society of the land that they wished to take over and so they have the same motivation. You say your organization is not naive, perhaps I am naive, but can you indeed get away with making those comments and expecting them to be believed?

Steven Best:

I think that your point is well taken. April 29, 1986 - Globe and Mail. "New Brunswick Attorney General David Clark recently found himself in hot water with Native groups after he delivered stinging criticism of Indian salmon fishermen at a meeting of the Atlantic Salmon Federation. Mr. Clark said several Metis reserves in New Brunswick and in Quebec are wilfully abusing the food fishing program and quota agreements and are carrying commercial fishery under the guise of a food fishery". Bill Wilson talked about his cousin and concerns about him salmon fishing so I agree that not all Native people destroy wildlife. And I think I made that point in the paper and I think that my examples were poor. My paper will be in the proceedings and there are references to other and more recent examples in the Yukon with management of ungulates and wolves where the Native take of ungulates is virtually unregulated and they can't even figure out how much it is or what impact it has on management. At the same time people try to fix that.

Clifford Freeman:

I am from northern Alberta TD8. I am also an elected representative which represents 14,000 Indians in Northern Alberta. My responsibility is to protect treaty rights and the aboriginal rights of Indian people in northern Alberta which includes hunting, fishing and trapping and also the protection of the environment. I was a bit disturbed with a lot of the comments you (Steven Best) have made. I shouldn't say a bit disturbed, I think I was quite peeved-off if you want to put it that way. I think those types of comments are the exact kind of things Indian people are dealing with; we are always putting up with comments that are made with no real backing. I say that because when you say that Indian people are no longer in touch with the environment I have plenty of examples that prove you wrong. The Indian people of northern Alberta have always made their position known in the areas of protecting environment. A lot of the general public do not know what is taking place. I am hoping that more vegetarians become involved with this because it deals with vegetarian ecological cycle and the government is destroying that.

Alan Birdsall:

Did you have a question?

Clifford Freeman: Well I do have a question indeed. But if I may be allowed the same amount of time as your guests, I think that would be fair in terms of biologists' understanding that Indian people have to protect things that are being said against them.

Alan Birdsall: Well there are a considerable number of Indian people present and we do not have the time to hear the position of each person. So I wonder if you could ask a question of the panel and let them respond.

Clifford Freeman: Thank you Mr. Chairman. I guess the question I would like to ask -- it is unfair for me to be limited this way -- but the question I would like to ask of the guest speaker -- I won't call them any names so I guess I'll call him Steve -- Does he really feel that picking on a group such as Native people will resolve the problem that he is attacking? I feel quite strongly that there are more important issues that they should be going after. I guess a prime example of that would be moose hunting in Alberta itself. There are only 40,000 registered treaty Indians in Alberta and maybe a third of these people will go out and hunt whereas there are over 80,000 moose licenses that are sold to sport hunters and also American hunters. Which to me is a lot more kill of moose than the Indian people are taking. I feel that this would be an area where perhaps they could pursue and support Native people in the fact that we disagree with that and that we are always fingered out as the people who are a threat to the environment whereas we feel we are not.

Steven Best: Is your question "Why am I attacking Native people?"

Clifford Freeman: Indirectly, I guess it is.

Steven Best: I have been involved in issues from Nicaragua to the Phillipines to Australia to raising beef cattle in African countries and I get the same answer from everybody. Everybody says why me? I don't know anyone who is going to get to the point that he's going to say: O.K., I should be doing it too. You are not being singled out. I am working on campaigns on how to deal with sport hunting as well, and angling, so I mean you are not being treated any differently than anyone else.

Clifford Freeman: I guess with that Mr. Chairman, if I may say, that if we are not being singled out I would request that you stop using us as examples.

Peter Usher: I am going to forgo any dispute of all the facts or so-called facts that you have put forward today and ask a question that is based on the way that you have presented your movement -- that disturbed me very deeply as a mode of political discourse in our society -- and therefore I'll have to say what I think that is. Then I will ask the question very briefly. As someone who has been very actively involved in a lot of social movements in my time and its something I expect to continue to be, there is one thing that you learn from being

involved in such movements and that is that the leaders must have discourse with their constituents. You tell me your constituents are the animals and I wonder how you have discourse with them and how the constituents then control the nature of your campaign and inform your campaign as a leader. Because if you do not have such, your constituent informing your campaign, you are in very great danger, Sir, of fanaticism. And I find that exceedingly alarming, because you have put it in a market perspective. You have suggested that you are dispensing a service and as long as people are willing to pay for it you will dispense it. And that is what I hear pornographers say. I would like to know, and here is my question; why your industry should not be regulated in exactly the way that pornography should be regulated?

Steven Best: Well the difference between me and the fur industry is that I sell animals alive and they sell them dead. I am a fanatic! I will not dispute that one minute and I think that the part of the question of my constituency or the people I represent or things I represent being the animals and not being able to communicate with them is just a frivolous part of garbage that you just popped up and I think . . . well I made my point.

Unidentified Speaker: A short comment and a question. There is a history of alcohol use among North American Indians in southwestern California and Mexico. Indians in that area had no alcohol problem at all. They handled it perfectly well until contact with Europeans and the taking over of certain property and rights they had which affected the way their society operated and lead to the break down of certain controls that they had been able to exert over their members. And the same has been documented in many other places. So when I listen to your analysis, I was hoping to hear something about the fur trade era. How the property rights and protection of territories and exertions of control over hunting in aboriginal society would have been affected by either the Hudson Bay Company or the general impact of European society? In that, I found a big link missing from your analysis.

Steven Best: In the proceedings of the paper, all the comments are referenced and you will find that there are a number of books that detail that. Calvin Martens' "Keepers of Game" spells out how that broke down and I think very very well. So I can't in 30 minutes give a complete analysis of the fur trade.

Unidentified Speaker: I did not find it anywhere in your presentation.

Steven Best: What I am saying is that in a paper of this nature, it would not be possible to address a complete overview of the fur trade and Native people interaction. What I am saying is that in the references of the paper there is a sufficient list of books and papers that spell out precisely that--just what you have said -- because you are exactly right. The whole thing broke down. In fact, there was a situation at one point where the Chiefs had no control over the structures.

Unidentified Speaker: But I think your analysis seemed to be linking individuals and individual hunting patterns rather than the operation of a society.

Steven Best: What I am saying, is the best thing that could happen to Native people is for all the Europeans to go away and just leave it to them, leave them the country. It would have been fine. The problem is our interaction, our lust for an unconscionable bloody fashion product in Europe is what did it. That's what I'm saying. We should all go home.

Alan Birdsall: I recognize that this topic requires consideration of a lot of complexity, but I would like to appeal to the questioners not to consider this an opportunity to give the audience their position but to explore more the participants in the panel.

Alan Herscovici: I would like to make a brief comment. Of course there are some quite offensive things in that presentation and people are addressing it. And I know with my own knowledge that some of the sources can be questioned and a lot of people are restraining themselves from doing it. I think the main point to bear in mind is understanding why Steve was doing that. His presentation adheres to no importance whatsoever. The point is this research is being conducted for the anti-fur campaign and is being prepared. The reason it is being presented is because the most serious threat to the anti-fur campaign working is that finally Native people are finding a voice and beginning to get their side of the story across to the public. Trying to prove that the fur trade is the worst thing that every happened to Native people is totally nonsensical thing. The point is that Native people today are standing up and saying that for some of their people this is part of their livelihood and that if you take this away, this is a continuation of that same colonial spirit. You know, a dictator from the outside with no understanding of the peoples lives and culture or interest in finding out about what people should be doing. You should be proud and the Native people speaking should be proud that this movement is taking that much care in trying to demolish the position that groups like ISI and so on have opposed. ISI is one of the strongest responses that these movements have yet encountered. They never have encountered anything like this in the anti-sealing campaign. So that of course, is a cause of optimism, I think, if work continues. In other words, the anti-sealing campaign have changed the environment. And groups that were never organized are beginning to organize, and that is the only response to this. There will be some dispute obviously as an historical reference but the . . . threat and should the people know about this. Anyway, I'll stop now.

Sam Sinclair: First, I would like to remind you Mr. Chairman, it is upsetting to some of us when we have listened to these (talks) for three days and now we are limited. I am willing to just put three minutes of explanation rather than question if you will allow me to comment on our involvement in some of the topics mentioned. Is that fair ball?

Alan Birdsall: Well the problem is we have a long line-up of questions and if each person presented their own position on animal rights, we would be here a lot longer than what we are permitted.

Sam Sinclair: We have already wasted a half minute there.

Alan Birdsall: But I recommend you go ahead.

Sam Sinclair: Alright, thank you very much. Alan (Herscovici), I like your animal movement, I would like to join you because I think it has more rights than aboriginal people. But anyway. I guess one of the things we would like to mention are some of the things that directly affect Native people and the Green Peace movement was one of them. It interests me when you talk of European countries. I was one of the people travelling within that group that was trying to educate Green Peace. I think it was a pretty good job done, not by individuals but a group of people that travelled with us. We met with the European government, with organizations in four countries. I was not in the London group, but I think they did a good job. And if we can educate Green Peace through a common sense approach in explaining our position as aboriginal people related to the lands and resources that are out there for everybody but also originally ours alone. We are willing to share with them, but we cannot stand harassment from people that are trying to angle for food and are disallowed that. I think the other thing I would like to mention, if we can educate Green Peace to a certain degree and now they withdrew and started to listen to us on the importance of the environment, of our people, then we might want to call the rest of the white people "white peace" and see if we can educate them to a certain degree. But anyway I am certainly trying to use the common sense approach here. Also, we have a very very strong position with both governments in Canada -- all governments I should say -- in our position in land base and self determination. It all relates to what you people are talking about. Now unless we get some support from the general public we are going to be a long time kicking things around. Some people get to be casualties and it will more likely be our people because we get very defenceless when we are not allowed the resources that we came from. And we just want to share what we think is rightfully ours. We do not want all lands; there is a bunch of land out there in the green zone that is open, and we want part of that action. We need your support. I often hear religious groups or others will say there is life after death. We are just asking, is there any life after birth. Thank you very much.

Jim Durange: I am an educated Indian, university graduate, trapper, hunter, and presently am administrator of an Indian band. I am a full blooded Indian who continues to live off the land, partaking in treaty rights guaranteed to us, hunting, fishing and trapping. We have enough problems in addressing the issues with game wardens in Fish and Wildlife to protect those rights. But if what you (Steven Best) said in your report earlier is true -- to support you or not to support you -- what I am saying right now is that you should leave us alone. I do not want anybody on my land telling me what to do because it is my land and my resources, my wildlife. And why are

you destroying the Indian way of life by campaigning against us and using the masses to support your campaign. It is a genesis. You are just killing the Indians and you have no right to do that.

Steven Best:

The purpose of my talk was to demonstrate to you what is actually going on. You can stand up and say whatever you want to me. It won't stop what is happening. There are no arguments being won here. The argument is going to be won on the street and the public is going to decide. My position is clear. I do not want them killing animals. I do not want them chopping down trees. I want the least impact by human beings on the world environment as possible. I want us to go as gently as we can. Now, if in that process, a culture is destroyed, a culture will be destroyed. Your problem is either to convince people that this is the wrong idea, that selling furs is fine. Or if I succeed, to look back into your roots and see if you can create an Indian culture that will survive the 21st century. The world is changing and you do live in an international environment.

Jim Fenway:

I am from Edson. I am also a trapper and I am with the Metis Association. I am the president of the local out there. I did not know what Mr. Sinclair was going to say but I guess I have to follow up on what he said. I think you (Steven Best) made one heck of a speech, you are a good speaker. You sure know how to get proposals across to people, and as you know we are just dealing on tripartite government trying to negotiate our rights that have been entrenched into the constitution. The Metis people without the rights, well we have no rights, we don't have any rights yet, but what I was thinking, if we could get you to represent us and draw up our rights, we could be what Hitler was dreaming of "the superior people". And if we could get you to agree with that, I would really be pleased.

Unidentified Speaker: My comment is really on the point of social history and social movements. I am very taken by the claim that the fur trade had this tremendous impact, although it was not the end of Indian culture as you have said. You attribute that to the demand of Europeans for fur whereas I attribute that to the building of centralized economic civilizations where economics dominate social and environmental concerns. Where the interests of a small group of people serve to govern and direct the organization and where there is a limitless need and demand for endless accumulation of money. It seems to me that's the history of fur trade organizations and why they have the devastating impacts they have had. My concern is that the defense of your movement sounds very similar to that. You (Steven Best) are defending a movement in which control and direction is in very centralized hands, in which the real defense of the logic of the movement is in economic terms, not in broad social and environmental terms, and in which the real goal of the movement is unlimited expansion and no attempt to compromise in limitation and balance. And it seems to me, this is the question, finally. This runs against everything that environmental and ecological science teaches us, which is that if the environment is to survive we have to decentralize control. We have to have people responsible for the way they engage themselves in their environment. We must have

broad social, environmental and economic concerns mixed, and we've got to strike some balance in limitations on the demands we place. And it seems to me the movement is not addressing any of those issues, and it is not organized to raise consciousness about the issues.

Steven Best:

The answers would be yes, yes, maybe, possibly, and could be. The . . . where to begin? Let me go back to the first one, the organization. The economics of the organization are a reality. The purpose of the people in it are not from a monetary purpose. We do not have shareholders and all the money we bring in goes back out. But we live and die economics. There's a guy who wants rent every month, there are secretaries to be paid and printers bills to be paid and so on and so forth. The money does not come in and nothing happens. Now if there were some kind of government aid to what I do, which there is to all sorts of other programs, that would be fine. It is very similar to a political party in that sense as we are not funded by the government. We actually are a tax thing for them now which is kind of a neat trick. So it's not being done for economic purposes. It is being done for the broader philosophical purpose, the basic purpose of the organization. We cannot ignore the economic realities.

You talk about the broader environment, why you want a diversification of power and so on and so forth. I would accept that, if we were to change the political system to one of proportional representation as opposed to one of constituency. I think a lot of the power that private producers have politically in this country is based on the fact that they can dominate constituencies, political constituencies. And the fact that they have less power in Europe is because of the fact that it is proportional representation. In other words, I don't want to get too complicated in political theory here, but bottom line of it here is that constituencies are by area and by geography. The constituencies in Europe are by interests. In other words, an interest group forms in effect a political type party and is then represented in the states affairs, in the decision making process. Now it does not happen in Canada, North America, Great Britain. There are no representatives in government representing the environment. They represent natural resources as an exploitable commodity, but there is no voice being brought up to say: "Maybe we should not even do that. Maybe there is an inherent value in that river being undammed for no reason at all. Maybe there is an inherent value for some beaver just because they are there as an advocate for that case. The less we use natural resources, the better we are. That is a reasonable thing to say. I don't know if I have answered your question as your question was sort of long and I started to loose the train of thought through it. And I think I've lost my train of thought. This is the best I could do.

Alan Birdsall:

As some of you may note, we are cutting rather heavily into Dr. Macpherson's time. So what I would like to do is to have the four people -- consider the questions from the four people that are standing -- and then proceed to the panel for the wrap up.

Joanna Lipton:

I am from Slave Lake with the Metis Association Zone 5. First I would like to make one comment and it is for all the biologists as well as for Mr. Best. I don't believe I am extinct yet. I can still talk to animals. I was taught this by my mother at a very early age of three and I used to have to collect snakes from the raspberry bushes so the white people would not scream when they came to pick our raspberries. I would have to get up around five o'clock in the morning to do this every day. Anyway that is another issue. The question I would like to ask is did you get in to this animal rights movement for monetary reasons?

Steven Best:

I got into it because in 1975 I was asked by the International Fund for Animal Welfare to make a film on the baby seal hunt and I went out and spent a week camping on the ice with harp seals. That was in the Gulf of St. Lawrence. There was not a ship based hunt. It was a pristine arctic environment with just the seals. And I don't know if you have spent much time with seals but in time I spent with them it was clear to me that we were dealing . . . well it was a very profound experience spending time with them and camping out under the stars. I then went up to Newfoundland, off Lewisport, and watched the same seals being clubbed to death. And right then and there, I simply made up my mind I don't care if they are worth a million dollars each and the island sinks if they don't kill seals. You don't do that. You simply do not do that to a living thing just so that one hooker in Paris. . . God damn it you don't do that. I'm sorry.

Joanne Lipton:

You do a good job of playing on emotions I have to admit. I want to ask Alan (Herscovici). Alan, how do you see us counteracting this system of emotionalism with logic? I would like some assistance and advice.

Alan Herscovici:

I'm not convinced that it is emotionalism versus logic. I think there is emotions on both sides and logic on both sides. I can understand that some people who are not involved in having to kill animals for their daily livelihood or don't do that, it could be upsetting to see it. But I can also understand that people who are doing that can get quite emotional when someone else wipes out their livelihood. Totally inconsistent, in the sense that they are not doing anything out of the context of the rest society, in a society that is consuming huge amounts of animals in meat raised as livestock. Interesting. So I think there is emotion on both side. Steven Best has done us a real service in that I think he shows very clearly and tells very clearly what he is doing and how he is doing it and I think the challenge is to see what can be done to change that, if you do not agree with his conclusions. Steven is saying that he thinks no use of the animals is the best. I personally think that it is an impossible idea. I do not think we can live without killing something. I mean I do it unconsciously. I may not go out and kill a harp seal but my body is doing it to microbes who are trying to invade and trying to kill me if I did not try to resist them. If I don't have to kill harp seals or kill other animals to eat, it is because there is a whole structure, including this kind of building, that is very destructive to the environment that is permitting the luxury of not having to go out and kill things first. So I disagree with Steve's idea. Now Steven is

saying: there is a constituency that is willing to support what I am saying and therefore we can do what we are saying. I think the only answer to that is not to implore Steve not to do it. Although I think that's fair enough, I mean obviously we are all human and we are all learning. I don't think there are any firm lines drawn anywhere. If he is right, maybe he can persuade us. And if the other point is true, I think we are all learning. If we all said nothing, I don't think we would be alive at all. Life is change.

I think the problem is animals rights can identify some problems in the society. Part of it is that we have become very specialized. There was a time not so long ago when most people did more or less the same things. Everybody lived on a farm, and lived more or less the same and understood what we were doing. We now have a society that is very specialized and we all do very different things. I think it sometimes means we don't always understand what the others are doing so we have a large group of people who have no understanding of people who are using animals directly -- what it is that they are doing -- and so many false ideas continue. I think the problem is one of changing the environment. In other words, the public knowledge or lack of knowledge of the people who are still living that way. There is a story that has to be told, that has to get across and the good side to the story. There are at least two good things that I can see. One is there are times when the worst things can be improved. Because everything is changing what was considered humane once, is no longer. What is considered humane today may no longer be. As I mentioned before, there are changes in trapping techniques thanks to people who were concerned. So things can change, so that is one good side.

The other good side is Native people for example who often did not have a strong say in the fur trade. They were just producers. One speaker talked of about getting into secondary production, protecting yourselves from the fluctuating process of the raw product by doing some secondary production. I have been hearing a lot of talk in the last year on my travelling around to different places. And I think that is very positive and that has partly come from this idea that some markets are threatened. Maybe we have to take more control of ourselves so we are not stuck like the sealers who as soon as they lost their corner on the markets were dead. So that is part of the change that Animals Groups are creating that I think is good. I am seeing trappers, Native trappers groups, organizing in order to get their story across in protective interest. I think that is good.

And finally -- not to go on too long -- it is an opportunity to educate the rest of the public about the importance of renewable resources. The fact that fur bearers perhaps are animals for hunting, meat and so on, but it is not necessary something primitive, we do not need more. But in the long run, the value of wildlife is far greater than any gold mine or oil well. We must go on protecting our environment. I think it is an opportunity to start talking about these things. I think it has to be action. The response cannot just be anger because that is not going to work. If it is just confrontational it will not work. Like I said in the talk, if people respond to these

campaigns, it is because it is touching real concerns the people have. But I think those concerns, unless we can all share, I think we should all be concerned about the environment. If you believe that Native people and non-Native people using fur and other renewable resources can enhance the environment, that there is some value of diversity to culture, that we should not all be living in the cities, that there is still value to people living on the land. I think we have to talk to the public and I think that is the solution. When that comes, the simplistic, overly narrow ideas, pretending we can stop killing things, then I think we won't be at that simplistic level of discussion anymore.

Greg McLean:

I live in Kitchener, Ontario. I guess what disturbs me about the animal rights movement, is that I think it has lost sight that there should be a congruence between tactics and between belief. Initially, I was attracted to it for the fact that it was introducing gentleness to the world. In Australia, where I was a member of it, they put out an excellent series of vegetarian cookbooks, a manual to raise your pets so they don't have to eat meat. I also like the way they went after the British aristocracy about the way they go fox hunting and so on. In the town where I live, there is Schneider's meat packing plant. And people aligned to the animals rights have gone out there and slashed the tires of the workers. And I think this is the sort of action that has a lot in common with the disturbing attack on the Native people and fur trapping. The workers of the Schneider plant derive income from their activity. I don't think what they do there ennobles them, I don't think it makes them morally better than other people, but these are people trapped into a way of getting compensation that does not constitute a worthwhile activity during their days. They certainly do not have any fun at it. But slashing their tires is an act of violence. It's also something that does nothing to address the matter in the . . . society and the corporate bosses that control that. So do you have any comment on the appropriateness of tactics and whether you feel there is congruence between your social relationships and your fellow species, as you are so careful to have one towards other species.

Steven Best:

The violence that is occurring in the animals rights movement is no different than the violence that occurs everywhere. I don't use it. Native groups have used it, everybody uses it. There is always a small frustrated element in any movement that will use violence. It does not matter whether it is civil liberties or women's suffrage. I can give you a list. That is a natural phenomenon of what happens. As far as the tactics and strategies go, I am not playing games. This is not a toy. I will use any legal means I have to try to achieve what I am trying to do. And that is exactly what I do, and I am not going to have anyone tell me that it does not fit your moral concept of how I should act. I am going to do everything I can to achieve the ends. As far as the meat industry goes, as soon as I get big enough, I am speaking collectively, I'll take on the meat industry. The animals rights movement is a fraction of the size of the fur trade, a fraction of the sport hunting trade, a fraction of the angling trade, of all of it. If it gets bigger, it will tackle other things. If it doesn't get bigger it won't, but we are going to give it a shot.

Unidentified Speaker: I wanted to follow up on your comments just now and some of your comments from earlier. It appears to me that you are expanding, at least in an alarmist way, away from the animal movement into a prolife movement and the things that you are saying earlier included.

Steven Best: Is this going to be an abortion question?

Unidentified Speaker: No, it's a treaty question. You were talking before about treaties and timber and combining that with animal husbandry activities. What I want to know is what are the limits to your attempt to avoid death? Do you stop at animals, animal husbandry? Do you stop at the timber industry, agriculture? I enjoy eating lettuce for instance. Do you stop at the level of the trade or the animal or the lettuce plant?

Steven Best: I think I would take the lettuce plant seriously. I think what Alan said earlier on discusses this. You cannot be a biological organism without impacting on other biological organisms. We live on other things' death. The decision we have as human beings is what do you kill for, how much killing do you intend to do. My argument is it would be advisable to kill as little as possible. I would much prefer that forests were left alone. That if we need wood there could be an agricultural process to wood or a concrete process. All I am saying is that, and all the animal rights are saying, is that human beings have a choice of how much killing they do to survive and you make the choice. At some point the pressures being brought by political work that people like me do, will come up against a resistance to how far it can go. I won't make the decision as to how far it goes. I will push as far as I can. There is some other authority that will decide, but there is no reason for me not to push. If I can stop the forestry industry I would too. But now you are talking about the biggest employer in British Columbia and if you think dealing with the fur industry is difficult, try dealing with loggers. There is a problem going on in south Moresby with logging and ... I don't know if I answered your question. I don't mind you eating lettuce, just do it humanely.

Jeff Green: Before the question, I would like to make just one remark. After the rapporteur's presentation today, perhaps those people who would like to see Alan's video can stay and we can continue the discussion. I will leave it up to you.

I would now like to direct my question to Steve. The animals rights movements appears to be trying to obstruct the use of animals by Native people and I would like to know if the movement is presently working or will be working towards constructively providing alternatives and culturally-acceptable work opportunities for Native people.

Steven Best: No. I haven't got the money, I haven't got the skills or the time so I'm not about too. But I mean I think that is what I would like. I may have responded to that question rather flippantly and I should not have but that's been argued a lot. Newfoundland is just the

same thing. What are we going to do if we don't add some obligation to put in some job creation programs. The Newfoundland government with all of its money and the federal government with all of its money could not deal with the problem. I think I would not be the best person to choose. I don't think I could do better than they. I think what has to happen is there has to be an understanding of the animal rights ethic, if you will, as a reality, an absolute reality. And if you are going to hitch your wagon to animal-based, especially wild animal production, which even the fur industry, even the fashion industry is trying to get out of, and not allow for the possibility that you are not going to sell your products and you hitch your economic wagon to that without any kind of fallback position, you are making a terrible mistake. You may win this. It may be that the whole thing flounders and you can go off and do what you want to do. But there is a possibility you are not and by god, you better plan for that eventuality. It is just prudent to do that.

Jeff Green: So your movement does not plan to provide any employment alternatives?

Steven Best: I can't -- if I could -- I can't when I work full time doing this.

Steven Best: If that is what you are doing, we could discuss this. What is your bottom line?

Alan Birdsall: I would like to have the three speakers sum up if they would like to, starting with Jim.

Jim Bourque: My explanation is very short. I guess the bottom line is that from where I come from, it's whose putting and shouldn't have put something in his mouth. If I was confronted with the decision of whether or not to kill a seal or a caribou to feed my child, I'll tell you one thing. God damn it, I'll do it everytime.

Alan Herscovici: I would just like to hit the table too! I feel like a light weight on the subject. I don't want to be flippant but I will be. I don't think that any hookers in Paris wore any sealskin coats.

(An argument occurs here; too many people talking at once to decipher.)

Unidentified Speaker: His remark is not very good because I never . . . (inaudible remarks) . . . fur coat . . . (inaudible remarks) . . . and you be careful in what you say.

Steven Best: I apologize.

Alan Herscovici: I'll make just a few comments to close. When the question of violence was brought up, we should consider it as violence and not accidental and it is not identical to any other movement. I do not agree with the suggestion by Steve that it happens naturally. The inherent notion in most animal rights philosophy says that all living beings are not the same but have equal rights. In other words that

treating an animal the same way that someone would treat a human is wrong.

You don't say that. If you say that to young people, to anyone who is going to take that seriously. Well the conclusion is logical. If you are telling people that animals are precisely the same in a moral sense as humans, well, then the judgement at Nuremburg is clear that as a citizen you are obliged to take whatever action is necessary to stop genocide of other people or whatever. But if you are accepting animals as the same as people and you are telling that to young people in England, in Europe and in America and so on, that what is being done is precisely as if you are . . . and it is said very clear to them that it is the same as concentration camps, factory farms, ranches and so on, then I don't think you can say that violence is accidental. Here is a quote from an animal liberation magazine "These obscene garments are being flaunted by perverts that deserve all the hassle we can give them. Spitting and verbal assault are very effective and gradually these cretins will begin to expect trouble each time they step out in their stolen boots. A careful squirt of battery acid from a syringe on the back of the coat will have the desired effect." Here is one from Canada -- it is not just from Europe -- from Canada. Vikki Miller of . . . a group with which Steve is working and are doing anti-fur demonstrations I believe right today in Montreal, and she said "I believe this decade will see the first acts of true violence. Some may be accidental; a bystander killed in a bomb blast, and some will be deliberate like a vivisector shot in the street." Because, once you accept that animals are equal, moral stands with humans, then I mean not only is it correct to take such an action theoretically, more philosophically, but you would be obliged to account to the judgement of Nuremburg that you are not innocent just because you obey what is being said. In terms of what is beginning to come out of Native lives, I think this is something that is going to have to be dealt with a quote from a letter recently sent to me from the Animals Agenda which is an animals rights magazine. There was a letter to the editor about the idea of Green Peace pulling out of the anti-fur campaign in respect to the objections from ISI and a letterwriter, a number of letterwriters from recent months, opposing the Green Peace proposal, a Greenpeace decision and hope that others will not abide by it. And the letter "These traditional ways of life should be shown for what they really are, anacronisms blocking progress towards more humane standards, the war in nature must be slowed down." You noticed how it shifted to the war in nature to concerting that there is a war in nature. I won't go on much longer, but Steve was saying that we must go on to protect the environment. He just said that. I am not convinced though that no use is the way to protect the environment, because it is not using animals that is the danger to the environment today. We can wipe out all the water today very nicely without ever trapping, simply by continuing this industrial effort. That is the problem we are dealing with and so the answer is not to argue with Steve necessarily, although I think that is healthy. But we all learn from it. But as you know, Steve was saying I am not a constituent that is ready to buy this. I can't get them to buy toxic wastes or else I would be doing that. Presumably you know, but

they might buy this animal issue but the problem is there has not been enough education of the public and since this is a biologists seminar, I think it leads to a very important point I want to make. I think biologists and scientists have a responsibility today. It is not good enough to stand back and do studies, prepare data and to do scientific work and pretend it does not have an impact on the real world. The people who are capable of speaking on some of these issues, in certain cases you know, are often only scientists and biologists that can address some of the questions. Many of them are employed by the government. They have difficulty speaking on some issues or the consultants have private clients and are not free to speak to certain issues. Or they have problems on what is the role of pure science in practical applications. We are going to have to think about those things because things are happening. As Steve is saying, this is the reality of what is happening. There has to be a response to that and I think scientists have yet to think very carefully of what role you are going to play. It is not just a wildlife issue. It has got to do with the animal experimentation too, as well as many other issues. I think this is something I can leave you with. The scientific community must think about it, what its role is to be.

Steven Best:

If the exploitation of animals was, as you suggest for purposes of eating -- in other words, you have to kill a caribou in order to feed your family -- there would never be a campaign. Where it becomes a problem is when the purpose is for something like fashion. Where you have what is essentially considered by many people to be a frivolous endeavor. But the idea is that you don't, and other people fully believe that it is not a reasonable thing to kill a little something for fashion whim. It applies to that, and the response would be the public was not accepting the idea that it is reasonable to do testing on animals to design a new mascara. It seems like not an unreasonable to hold . . . if what you want is what I am saying to you. If what you want to do is get into the fashion markets which is what you are in if you are selling trapped goods you will be confronted with people saying shouldn't kill things for fashion. It is a decision that some people have made. You better be prepared for that. The other side, just on the violence thing as I think Alan has misinterpreted it, I don't know any one, and I know people in the most extreme organizations, who condone violence towards people or towards whatever. The most extreme group that I have ever had the opportunity to touch base with is the group called the Animal Liberation Front. They will break into places to gain information or sometimes they look at it in terms of releasing animals, but essentially it is to gain information and photographs and practices going on in vivisections. There are laws now being changed in the United States because of information that they have gotten out of labs that was kept secret. But in every movement violence occurs. They are blowing up abortions clinics in the States. It is just because the social movements do these things and that's the nature of the beast.

Alan Herscovici:

Is it not violent to tear up people's livelihoods.

- Steven Best: You are talking about political violence as opposed to physical violence.
- Alan Herscovici: Is it not equally violent if the people have no alternatives?
- Steven Best: I don't think it is equally violent if you want to use that term. I think it is equally disruptive. If you are going to shift the meaning of violence to a social sense, I have some trouble using your meanings but what you are talking about is blowing up buildings
- Alan Herscovici: (Inaudible comment.)
- Steven Best: Sorry. If you want to use the term violence to say that it is violent to disrupt someone life because of activities I am doing, then I, in the interest of an acceptance of definition I am prepared to accept the term violence. I had thought that what they were talking about was physical violence in terms of shooting people or blowing people up, but I don't mind playing semantic games.
- Alan Birdsall: I think we have finally reached a logical conclusion to the discussion.

CLOSING ADDRESS

Dr. Andrew H. Macpherson
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Allow me to begin by paying tribute to the contributions made to this meeting by distinguished political leaders, including its opening by the Honourable Milt Pahl, Minister Responsible for Native Affairs in the Government of Alberta, and today by the Honourable Nick Sibbeston, Leader of the Government of the Northwest Territories.

The Honourable Tom McMillan, Minister of Environment Canada, has asked me to pass on to you his regret that he was unable to join you today. My purpose in being here is to make some small contribution to your deliberations, on behalf of the Department, by bringing together some of the useful insights that have been expressed.

Let me do so by offering some general points:

1. first, on the changing perception of the specific roles of people and governments,
2. second, on a parallel change in perception of the role of science in government,
3. third, on the private as opposed to the public management of renewable resources, and
4. fourth, on some deeper implications of the shift in our economic philosophy.

First, peoples' ideas are changing on what governments should and should not do for them. The recent election in France, following the success of President Reagan in the United States, Prime Minister Mulroney in Canada and Prime Minister Thatcher in the United Kingdom, is part of a trend to choosing Western governments with more faith in the private sector and in free enterprise, as the engine of economic growth, and with less faith in state intervention.

Another apparent trend concerns the decline of the prominence of science in decision-making. I think we have to get used to the idea that scientists are no longer the next best thing to oracles. Decisions, good ones, can be made on other grounds than scientific advice; we have heard at this Symposium of the value and importance of including the knowledge which can be provided by groups or individuals other than scientists in the decision making process.

An example mentioned by Mr. Sibbeston of scientists losing credibility concerns population predictions for the Kaminuriak caribou herd made by biologists in recent years. I still don't know what happened: perhaps some rare merging of distinct herds that led to the apparent explosion of the Kaminuriak population. What it did tell me is that wildlife research can be a high-risk career!

By Natives, I am assuming that the people we mean are those defined as "aboriginal" in the Constitution Act, Part II, Section 35.

The rights held by the various Native groups vary considerably according to their treaties or land claim settlements. As treaties are by nature negotiated instruments, one may surmise that aboriginal rights in Canada are essentially what may in future be decided. It is to be expected, and in fact is the case, that where Canadian resource-dependent aboriginal peoples are negotiating agreements with the Federal Government, they will work very hard to obtain control over management, either full or shared, of those resources. The importance placed by Natives on retaining access to fish and wildlife resources so as to meet food requirements and to maintain their cultural heritage based on resource harvesting was very well stated by Bill Wilson on Tuesday and reiterated by subsequent speakers including Chief Archie Waquan and Jim Bourque. The recently released report of the Task Force to Review Comprehensive Claims Policy strongly advocates that the claims process be viewed as an opportunity to define a new relationship between aboriginal and non-aboriginal Canadians based on consent, self-determination and self-sufficiency.

By making these observations I hope I have set the stage for discussing the idea of private versus public resource management, of giving people, specifically Native people, control of and responsibility for managing the resources on which they depend.

Are there implications of future Native resource management regimes that may concern the larger society?

R. H. Scammell (1977) perceptively described the origin of our Western Canadian cultural attitudes to the exploitation of wildlife. European settlers he noted were, in large part, people who had no hunting rights, and had been subject to horrible penalties if caught poaching. The New World offered them hunting opportunities that they avidly enjoyed and consequently they were quick to adopt the principle that game belonged to all the people. This made game a common property resource, but one for which regulations were firmly opposed, not only by the settlers but by the Natives as well. Rapid depletion was the predictable consequence of unregulated harvesting, and regulations were, at last, reluctantly accepted.

The feudal system, and the appropriation of exclusive rights over wildlife by landowners, the concept on which Canadian settlers from Europe had turned their backs, has been adapted continually to a changing world, and one finds contrasting vestiges in the various countries of Western and Eastern Europe and in the USSR. Essentially, game management retains its private character, whether under single ownership as in the case of some Scottish deer-forests, for example; or vested in landowners in association with shooting syndicates, as with upland game in England; or in hunting associations, as in such countries as Poland and the former Baltic states, or under collective farms and hunting and trapping collectives, as in parts of the Soviet Union.

Private game management contrasts markedly with our familiar public system. Typically, it provides wild game food products to the market place. Obviously, it does not provide for the same quality control, through meat inspection, that we employ. But of much more significance is the accountability it provides: in our system of common property resources, hunters tend to take what the law allows, leaving responsibility for maintenance of the resource up to governments; private owners, on the other hand, must accept the need to perpetuate, even enhance the resource as their first consideration.

It is my belief, then, that there are distinct advantages to realizing some degree of privatization of wildlife resources. There are real cultural constraints, however, buried in the historical roots of the majority. Each case may require careful analysis, for feasibility and value. For example, private ownership of commercial forests has very distinct

advantages in terms of stewardship, and some peculiar problems, as for example when the state is faced with a widespread, devastating insect outbreak.

Peter Usher made the point that while there is general agreement on the desirability of conservation, at least for the North, agreement as to how this objective can best be achieved is not easily reached. Indeed, the variation in physical, biological, cultural, economic and political factors in space and time dictate that many kinds of management systems be developed, and that these systems be flexible enough to adapt to the changes of the future.

To sum up, we should, I think be experimental, innovative and open-minded on the subject of Native resource management in Canada. We can learn much from observing the operations of the Beverly and Kaminuriak Caribou Management Board as described by Duncan Marshall or the cooperative management of polar bears on northeast Baffin Island on which Kevin Lloyd spoke. But, we must always strive to seek solutions which fit the situation at hand.

Although the debate over the "Animal Rights" issue has loomed large in this conference, I have to confess that I cannot see it as a lasting issue of great concern. The reason is that, with increasing knowledge of our biological origins, it is increasingly clear that we evolved under the demands of the chase: hunting is inextricably linked to our nature as humans.

Members of the Alberta Society of Professional Biologists will be interested in the implications of a move toward the privatization of renewable resource management to their profession.

Such a move would obviously foster job formation in the private sector, including Canada's Native population, perhaps at the expense of opportunities in the public sector. David McArthur gave a case in point, at the Kikino Metis Settlement north of here. There could be an increase in the base level of jobs connected with resource management, but I suspect that the private sector might utilize fewer scientists and more technicians, more gamekeepers with rule-of-thumb skills and fewer researchers. If the private managers are from aboriginal groups, as contemplated here, then there is an implied obligation on our profession to ensure that appropriate numbers of trained members of these people are available in order to ensure sound management can proceed. In this regard, Arctic College is to be commended on offering such relevant and practical courses in their Renewable Resources Technology Program.

I suggest that there could be a general increase in total jobs because private management will probably be more intensive, using more skills as well as capital and labour. Dr. Stu Smith has described an intensive form of management based on water control on the Peace-Athabasca delta, such as would require modelling, monitoring and other scientific and technical activities in addition to those currently underway.

It is widely understood that Canada's aboriginal peoples are urgently in need of economic development opportunities. If privatized management of renewable resources can provide fulfilling and sustaining economic activity for Natives, then surely the subject must be pursued. Renewable resource management must of course be thought of not only in terms of fish and wildlife management, but in agriculture and forestry, as the Honourable Nick Sibbeston emphasized.

Personally, and I recognize that there are true believers, such as Dr. Harvey Feit and Dr. George Wenzel, to contend with on this point, I am not convinced of the extent to

which any subsistence people, whether in North America or the United Kingdom or wherever, ever consistently practiced sustainable yield management, either on the supply side or the demand side, notwithstanding the fact, that Jim Bourque makes, that excellent examples of trap-line management exist. I believe game management arose historically, in the main, in more crowded societies, in the process of partitioning the commons, in privatizing common property resources. However, by the same token, I believe that Canadian aboriginal peoples are at least as capable as any others of instituting the most prudent of game management programs. In fact, we already have ample evidence that Canadian Natives make good game managers. As Jim Bourque so clearly stated, it has sometimes been the case in the North that Native people stood alone in their defence of natural values and of wildlife and wildlife habitat.

However, that being said (because I have found that if a speaker leaves too much to the imagination of his listeners he may later find evidence to indicate that not all of them had one), I must express another, personal note. I have the feeling that there is something very noble about the sentiment that game belongs to all the people, or land belongs to all the people, or water belongs to all the people. Our renewable resources once could belong to all the people, when our collective pressures on them were light and easily sustained.

The recent Pearse enquiry into federal water policy found that despite Canada's abundant water resources, the time had come to be much more serious about managing demand. All over the world, humanity is overwhelming the productivity of our renewable resources. Resource managers must seriously address the question of demand management, asking questions about trade offs between environmental quality and human population size, and environmental quality and human consumption.

To return to the question of privatization of renewable resources, I believe that the partition of the commons, and the resultant division of people into those who owned and had rights to, and those who were landless and had no rights to resources, was partly responsible for the emigration of people from Europe and for their settling in less crowded lands. There is ever more and more pressure with increasing populations for the partition of the remaining commons, and I see this question of private resource management as a symptom of the condition. There are cases in which private management, by Natives or by others, is a sensible and productive approach. There may be other cases in which we must proceed with extreme caution, in order to keep from unnecessarily damaging the rights of citizens to the enjoyments and the bounties afforded by our natural environment. We must remember that in assigning rights to one group, whether humans or animals, we are reassigning them from another group. The challenge to biologists, to Native resource managers, and to governments, is to ensure a balanced approach to the management of renewable resources.

To conclude, I am sure that the Honourable Tom McMillan would like to congratulate the ASPB on a very interesting and I believe useful symposium.

POSTER PAPER SESSION

THE KITIKMEOT HARVEST STUDY AS A SUCCESSFUL EXAMPLE FOR THE COLLECTION OF WILDLIFE HARVEST STATISTICS IN THE NORTHWEST TERRITORIES

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ABSTRACT: *Negotiations for the settlement of land claims, impending industrial developments and land use planning have widened the need for and importance of reliable harvest data beyond the requirements for effective wildlife management. In recognition of the increased use of harvest data, the Kitikmeot Hunters' and Trappers' Association resolved in 1982 to begin a harvest study in cooperation with the Department of Renewable Resources, Government of the Northwest Territories. Renewable Resources agreed to fund the Kitikmeot Hunters' and Trappers' Association to hire a fieldworker in each of the seven Kitikmeot communities. The fieldworker contacts as many active hunters as possible each month. In 1984, on average the fieldworkers contacted 88% of the active hunters each month, and the hunters reported on the numbers, sex-age class and location of caribou killed as well as the numbers of wolves, wolverine, foxes, hares, ptarmigan, seals, ducks, and geese harvested. Amounts of charr, trout and whitefish and location of the fishing are also supplied by the hunters. The high reporting rates and apparent representativeness of the hunters contacted are a measure of the project's success and acceptability.*

1.0 INTRODUCTION

Most families in the Northwest Territories still depend on wild game, birds or fish to varying degrees. One measure of the dependence on country food is the number of animals killed. However, obtaining reliable and accurate information has been a long-standing problem in the N. W. T. Some information has been sporadically collected over the last 40 years but has been subject to considerable shortcomings (e. g., Kale 1980, Usher et al. 1985).

The original need for wildlife harvest information was in the context of game management. Most of the harvest information was collected by Royal Canadian Mounted Police (RCMP) or game officers once a year when hunters renewed their General Hunting Licences (GHL), so accurate recall of numbers or sex and age of animals killed was not easy for the hunters.

After the Berger Commission in the mid-1970s (Berger 1977), public awareness of the potential political, social and economic changes that could follow from large-scale industrial developments greatly improved. The importance of wildlife harvest statistics in describing use of the land, and the increasing role of harvesters in wildlife management have lead to recognition of the need for harvest statistics as part of native land claims negotiations. In northern Canada, the first systematic and cooperative approach to the

collection of harvest statistics was in northern Quebec (James Bay and Northern Quebec Native Harvesting Research Committee [JBNQNHRC] 1982). The approach of relying on local fieldworkers hired to periodically interview hunters was followed by the Baffin Regional Inuit Association (BRIA) and the Keewatin Wildlife Federation (KWF) in the early 1980s (Donaldson 1984, Gamble 1984).

The Kitikmeot Hunters' and Trappers' Association (KHTA) also responded to the need to acquire accurate wildlife harvest information in order to establish a "basic needs level" for the Wildlife Provisions of an Agreement-in-Principle between the Inuit Tapirisat of Canada and the Federal Government. In 1982, the KHTA resolved to begin a harvest study and, together with the Department of Renewable Resources (DRR), prepared a budget and study proposal that was drafted and submitted to Ottawa. The proposal was put on hold until the Agreement-in-Principle is signed. In the meantime, DRR and KHTA have cooperated on a smaller scale study as both bodies felt the need for harvest data was too important to wait.

The Kitikmeot Harvest Study was funded by DRR at about one-tenth the level of the two other current Northwest Territories harvest studies, which received funding from the Federal as well as the Territorial Governments. In this paper, we describe the operation of the Kitikmeot Harvest study.

The Kitikmeot Hunters' and Trappers' Association is the regional organization of the Hunters' and Trappers' Associations of the seven communities in the Kitikmeot Region. Cambridge Bay and Coppermine are the largest communities with a mixed subsistence-wage economy. Spence Bay and Gjoa Haven have less opportunities for wage employment and the smaller communities of Bay Chimo, Holman, and Pelly Bay are even more dependent on a subsistence lifestyle.

2.0 METHODS

2.1 STUDY DESIGN

The fieldworkers contact as many hunters, defined as a GHIL holder who hunts at least once a year, each month. The hunters contacted are assumed to be a random sample and hunters not contacted are assumed not to be different from the sampled population. The sample population of hunters is not stratified. The sample size (number of hunters contacted by the fieldworker) varies each month as some hunters are out of town all month or cannot be reached.

The fieldworkers record how many of the sample population are successful hunters and their monthly harvest (Table 1). Harvest is defined as animals killed, retrieved and brought back to the community.

2.2 DATA COLLECTION

The harvest study was described during community meetings in 1982, and based on consultation with each local Hunters' and Trappers' Association, the KHTA hired a native fieldworker for each of the seven Kitikmeot communities. The objectives and methods of the study were explained to the fieldworkers during a workshop in 1982. Each fieldworker is provided with blank forms (in syllabics for the eastern communities according to the preference of the fieldworker) and a list of GHIL holders from DRR records. The forms have changed at intervals in response to requests by fieldworkers.

Table 1. Information Collected From Active Hunters Each Month.

<u>Active Hunter Status</u>	
1.	Successful Hunter
2.	Unsuccessful Hunter
3.	Did Not Hunt
4.	Out Hunting
5.	Out of Town
6.	Could Not Be Reached
<u>Harvest Information</u>	
1.	Number of caribou by sex-age class and location (bull, young bull, cow yearling, calf).
2.	Number of charr, trout and whitefish by location.
3.	Number of white, red, cross, blue or silver foxes.
4.	Numbers of wolf, wolverine or hares.
5.	Numbers of barren-ground grizzly bears by sex-age class and location (adult, subadult).
6.	Numbers of ptarmigan, geese or ducks.
7.	Numbers of bearded or ringed seals.
8.	Other occasionally harvested species such as beluga, flat fish, moose.

The fieldworker uses the GHL holder list as a basis to draw up a numbered list of active hunters. On the monthly harvest forms completed by the fieldworker, the individual hunters are identified by a number. Only the fieldworker and the Regional Biologist or Harvest Coordinator have copies of the numbered list of active hunters so as to respect the anonymity of the hunters.

The fieldworker contacts as many hunters as possible by phone or shortwave radio. The fieldworker was paid a monthly base pay of \$50.00 until April 1985 when it was increased to \$100.00 plus \$1.00/contact if less than half the active hunters are contacted or \$2.00/contact if more than half the active hunters are contacted. The hunters have a harvest calendar to help them keep account of their monthly harvest.

The fieldworker sends the completed harvest forms to the secretary-manager of the KHTA who arranges payment by cheque or credit through the Hudson Bay Company. Both the KHTA and DRR maintain copies of the data sheets. The KHTA invoices DRR for a monthly rate of \$200.00 (\$150 prior to April 1985) for each community under the terms of the annual contract. If the fieldworker contacts more than half the active hunters, DRR pays the KHTA a monthly bonus of \$125.00 for the larger communities (Cambridge Bay, Coppermine, Gjoa Haven and Spence Bay) and \$75.00 for the smaller communities (Bay Chimo, Holman and Pelly Bay). The harvests from outpost camps are included in their community total and Bathurst Inlet community is included in Bay Chimo's harvest total.

2.3 DATA ANALYSIS

The monthly harvest data are summarized by community: population size is the number of active hunters in the community for that month and sample size is the number of hunters contacted by the fieldworker. The data are stored as monthly totals by community on an Apple II Plus computer.

Extrapolation of the recorded harvest data from a sample of hunters to an estimated harvest for the population, assumes the data are random. The hunters are not selected randomly, however, but fortuitously according to their availability to the fieldworker. To test the randomness of the harvest sample, the mean reported monthly kill rate of caribou was plotted according to the distribution of the hunters (Graf 1984). Data from Pelly Bay, Spence Bay and Cambridge Bay in 1983 were used to illustrate the distribution of hunters and their contribution to the total community harvest of caribou. The frequency of contact of individual hunters was compared with their mean kill rate to ascertain if the missed hunters were unrepresentative of the hunter sample.

The estimated community harvest has been calculated only for caribou from the reported harvest of caribou (Jingfors In Press) using a method of proportional projection (JBNQNHRC 1982, Donaldson 1984). The high proportion of hunters contacted each month means that reported harvest is likely close to the estimated harvest for species widely used. For some species such as wolves, a different approach will be required as relatively few "specialist" hunters are involved.

In 1986, data input and analyses will be changed to use a hard disc system with greater storage capability which will facilitate more comprehensive data analyses.

3.0 RESULTS

Progress on the harvest study has been reported at the annual KHTA meetings and at individual HTA meetings since the start of the study. Interim progress reports on the 1983 and 1984 data were distributed in 1984 and 1985, respectively. Additionally, presented the estimates of the caribou harvest at the IV International Reindeer Caribou Symposium in 1985 (Jingfors in Press).

3.1 POPULATION AND SAMPLE SIZES

The total population in the Kitikmeot Region was 3,591 people in 1984 and 3,209 were Inuit (Table 2). The number of Inuit aged between 20 to 64 was 1,659 of which an average of .68 are active hunters. The number of active hunters varies slightly from month to month as some hunters may be out of town due to rotational wage employment.

The proportion of active hunters contacted each month in 1984 was $88\% \pm 13\%$ (standard deviation). In 1983, the proportion contacted was lower and more variable each month ($74 \pm 23.4\%$).

3.2 DATA COLLECTION

The fieldworkers have changed infrequently since the start of the study in 1982 (Table 3). Changes have been made to the monthly data collection sheets to incorporate suggestions by the fieldworkers. The information on the hunters was combined with the harvest record form after a request in 1986 to only have one form. The sex-age classes of caribou were changed to include separation of young bulls from prime bulls and yearlings from calves in recognition of names the Inuit use. Grizzly bear harvest information was added to the mainland community harvest forms in 1985 as the result of increased community interest in the harvest of barren-ground grizzly bears. The KHTA requested the inclusion of foxes in 1984. Muskoxen were dropped from the form in 1984 as muskoxen (and polar bears) are harvested under a quota system and information is available through the muskox tags issued.

3.3 DATA ANALYSIS

The distribution plots of individual hunter harvest rates for caribou showed a relatively normal distribution indicating that the majority of hunters were responsible for the majority of the caribou harvest (Graf 1984). There was no relationship between individual hunter harvest rate and the frequency of contact, which suggests that hunters not contacted by the fieldworker were not unrepresentative hunters. These results support the assumption that the hunter samples are sufficiently random to justify the extrapolation of the reported caribou harvest to an estimated total harvest. Jingfors (in Press) reports the estimated harvests of caribou in 1983 and 1984.

The reported harvest for all species (Table 4) for 1984 is included as an example of the wildlife harvest in the Kitikmeot Region. Further analyses on estimated harvests and annual differences in harvests are currently underway.

4.0 DISCUSSION

The Kitikmeot harvest study has been a relatively low cost project (\$20,000 - \$25,000/year since 1982) compared to the Keewatin Wildlife Federation's and Baffin Regional Inuit Association's (BRIA) harvest studies (annual costs exceeded \$200,000).

Table 2. Population and Sample Sizes of Communities in the Kitikmeot Region.

Community	Total Population ^a	No. of Inuit ^b	Proportion Inuit (%) ^c	Proportion Male Inuit Between 20-64 Years Old ^c	No. of Active Hunters (mean + S.D.) ^d	Sample Size % (mean + S.D.) ^b
Bay Chimo/ Bathurst Inlet	87	87	100	46	27 ± 1	99 ± 2
Cambridge Bay	928	727	78	19	128 ± 5	95 ± 3
Coppermine	848	784	92	19	164 ± 6	77 ± 21
Gjoa Haven	632	605	96	19	108 ± 6	92 ± 7
Holman	337	309	92	21	52 ± 5	87 ± 5
Pelly Bay	270	248	92	17	49 ± 1	77 ± 13
Spence Bay	459	424	92	19	140 ± 6	86 ± 12

^a For period June 1982 - December 1984 (Bureau of Statistics, G.N.W.T.).

^b Proportion of Hunters contacted each month.

^c From Bureau of Statistics, G.N.W.T. (December 1984).

^d Number of hunters present each month in 1984 (from G.H.L. Lists).

Table 3. Fieldworkers for the Kitikmeot Harvest Study, N.W.T., 1982-86.

Bay Chimo

Henry Kamoayak	Jan. 1983 -
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Cambridge Bay

James Kavanna	Dec. 1982 - April 1983
Harold Kayoina	May 1983 - June 1983
Paul and Kitty Taipagak	July 1983 - June 1983
John Maksagak	July 1985 -

Coppermine

Colin Adjuna	Jan. 1983 - Feb. 1983
Alice Aviogana	March 1983 - June 1983
Jerry Atatahak	July 1983 -

Gjoa Haven

Paul Iquallaq	Oct. 1982 - Nov. 1983
Bob Konana	Dec. 1983 -

Holman

David Kuptana	Jan. 1983 - July 1984
Jerry Akoakhion	Aug. 1984 - March 1985
David Kuptana	April 1985 -

Pelly Bay

Charlie Niptayok	Nov. 1982 -
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Spence Bay

Joe Ashevak ^a	Jan. 1983
David Tucktoo	Feb. 1983 -

^a Assistant Renewable Resource Officers temporarily assigned the start the study.

Table 4. Summary of Harvest Data by Community, 1984

	Pelly Bay	Spence Bay	Gjoa Haven	Cambridge Bay	Bay Chimo	Coppermine	Holman	TOTAL
Caribou	459	1,126	1,088	1,262	406	1,219	593	6,153
Hares	0	63	1	35	109	16	190	414
Ptarmigan	7	601	127	433	116	347	4	1,635
Ducks	0	498	131	779	99	1,101	2,318	4,926
Geese	0	51	148	372	15	536	15	1,137
Charr	10,134	10,642	3,779	12,587	1,088	15,179	3,688	57,097
Trout	279	4,754	771	2,033	317	884	1,162	10,200
Whitefish	0	345	1,107	154	85	4,119	0	5,810
Seals	133	595	148	190	54	483	1,332	2,935
Whales	0	3	0	0	0	0	0	3
White Fox	185	1,518	732	1,117	647	924	2,444	7,567
Cross Fox	1	23	8	2	19	70	17	159
Red Fox	2	6	0	1	75	214	19	317
Blue Fox	0	0	0	0	2	6	9	17
Wolverine	0	0	0	3	36	32	0	71
Wolf	12	1	6	9	26	27	4	85
Muskoxen	0	3	0	10	1	17	12	43

The principle difference in the costs was that the Kitikmeot Study was run by a Regional Biologist (DDR) and the KHTA secretary-manager rather than by two or more hired full-time coordinators and administrators and that travel costs of community visits were charged under the other programs. Even with the hiring of a coordinator in 1986, the costs of the Kitikmeot project have been less than the other two harvest studies.

Relative cost is not, however, the only factor that measures the success of the Kitikmeot harvest study. The high and consistent rate of active hunters contacted each month attests to the interest of both the fieldworkers and the hunters. The mean proportion of hunters contacted is higher in the Kitikmeot study than in the Baffin harvest study (79% in 1982; Donaldson 1984). The fieldworkers have stayed with the project relatively consistently since 1982, which is also a measure of the acceptability of the project to the hunters.

The validity and accuracy of the reported harvest data measures the success of the harvest study. The two possible factors that could compromise the accuracy of the data are accidental or deliberate misrepresentation of information by the hunters. The former is unlikely as fieldworkers have not reported any difficulty with hunters, or especially their wives, forgetting their harvests each month. Deliberate misrepresentation of the harvest is, of course, difficult to assess but is unlikely in the Region except perhaps related to spring hunting of migratory waterfowl. In the Region, there has been little controversy between hunters and the Department of Renewable Resources: hunting restrictions are few and have not become heated topics. Additionally, the data are collected by fieldworkers familiar with and known by the hunters -- four to five of the fieldworkers are or were presidents of their HTA -- so a great degree of trust exists.

The working relationship between KHTA and DRR has been cooperative in wildlife management and in resource development. Unlike the other two harvest studies in the Northwest Territories, DRR has analysed and reported the data as required for its purposes as well as ensuring the compiled data and analyses are provided to the KHTA, its constituent HTA's as well as to other government bodies. BRIA and KWF undertook their own data compilation and analyses but efforts to satisfy the funding government departments sometimes compromised a cooperative spirit. Both the KHTA and DRR have similar access to the raw data, so either party can analyse and interpret the data. This was not the case with the BRIA and KWF studies where the funding agencies did not have free and immediate access to the data. The continued openness and equality of access by either KHTA or DRR to the raw or compiled data and to the lists of hunters both reflects and contributes to the cooperation and trust and is one of the most important reasons of the success of the Kitikmeot harvest study.

To date, harvest data has been reported only as monthly summaries of the reported kills except for the estimates of the caribou harvest in 1983 and 1984 (Jingfors in press). DRR has recognized the difficulties of analysing the data and has obtained increased funding for computer analyses of the data. The increased funding also enabled the KHTA to hire a study coordinator to administer the program on a day-to-day basis with increased emphasis on feedback to the communities.

The Kitikmeot harvest study is still developing although it is sufficiently successful to be useful as a model for other harvest studies in the Northwest Territories. Its continued development and success will require understanding of the sometimes divergent objectives of the KHTA and DRR. For wildlife management, the importance of harvest data is to evaluate the effect of the harvest on the wildlife and to project potential harvest levels and encourage resource development. The KHTA's need to measure subsistence use has a socio-economic emphasis. For the latter, the extent and causes of variation in harvest

among individual hunters may be as important as the total reported or estimated kill. Socio-economic sampling considerations in data sampling may become desirable.

More discussions with the fieldworkers are planned through a workshop in fall 1986 to evaluate and define exactly what is being reported. For example, the role of trap loss, non-retrieval and non-consumption or use of different species may be significant but are only partially reported. From a wildlife management perspective, it is the total number lost to a population regardless of use or non-use (non-retrieval, etc.) that is important in evaluating a harvest. The extent and causes of non-retrieval or non-consumption of harvested wildlife are becoming more important to wildlife managers as the ethics of hunting come under increasing public scrutiny. From a perspective of evaluating subsistence levels, it is the consumptive use of game that is important. Discussions with fieldworkers would refine the definition of terms and possibly lead to measures of some of the possible discrepancies between kill and use. Some data such as a measure of trap loss of foxes could be used as the basis for more effective use of renewable resources.

The keys to the choice of the Kitikmeot harvest study as a model for subsequent harvest studies have been the result of the cooperation between DRR and KHTA; the equal access to the harvest data and the relatively low cost. Using the established Kitikmeot study as a model for other harvest studies in the Territories would lead to standardized data analyses and terminology.

6.0 ACKNOWLEDGEMENTS

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INCOME DIFFERENCES AMONG ALBERTA INDIAN RESERVES

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ABSTRACT: *While a considerable amount of information is available indicating the relatively difficult economic and social circumstances of Indian people compared with other Canadians, there has been less study of the differences among various Indian communities. This study takes twenty-six Alberta Indian reserves on which appropriate data could be obtained and describes in summary form the extent of inequalities among them. Comparisons of these inter-reserve differences are made with the corresponding differences among the Canadian provinces. The inequalities among the reserves are found to be considerably greater than those among the provinces. The incomes received by residents of the reserves are general personal incomes from all sources and specifically market employment incomes. Factors influencing the level of market employment incomes are found to be duration of employment, education levels, relative amount of reserve land, and gender. Reference is made to the extent to which personal incomes are increased as a result of certain reserves having resource revenues. The study emphasizes how education must be seen as a critical factor in promoting Indian advancement, and points to possible difficulties in reconciling collectivist traditions and managerial and entrepreneurial development.*

1.0 INTRODUCTION

The objective of this study is to contribute to an increased understanding of some of the factors that have been important in influencing the relative income levels of Alberta Indian reserves. In discussing these factors the paper will proceed as follows. Part 1.0 will provide introductory and background material to establish perspectives for the rest of the paper. Part 2.0 will set out some of this data in descriptive form and make some overall comments on it including comparisons between Alberta reserves and the provinces. Part 3.0 will then use the data in an analytical manner to test some simple theories of the causes of income differences among the reserves. Part 4.0 will stand back from the detail and attempt some general conclusions.

It is well known that the economic and social conditions of Alberta's natives, especially status Indians, compare unfavourably with those of the rest of the province's population (Signer and Locatelli 1980, Alberta Manpower and Alberta Native Secretariat 1984, Smith 1985). The root causes of the economic and social problems experienced by status Indians (although not their solutions) are basically straightforward. They lie in the withering of important parts of the traditional Indian economy (those pertaining to hunting, fishing and trapping) with the arrival of traders and settlers and the only limited success that has attended efforts to establish alternative economic bases for Indian communities. To some extent status Indians in Alberta (and the rest of Canada) have become mired in an economic no-man's-land and marginalized, alienated as strangers in their own land.

There is considerable irony as well as tragedy in this situation as it is surely a classic case of laws and policies having results almost exactly the opposite of those that were desired by the responsible parties. The main Treaties signed between Alberta tribes

and the Government of Canada in 1876, 1877, and 1899 contained provisions that were clearly intended to promote both the economic viability of Indian communities and their social security and advancement. These provisions varied as between the three Treaties, but collectively included: establishment of a land base of reserves on a scale equivalent to about one square mile per family of five (Bartlett 1986:210) - a proportion similar to that at which land was being made available to families of settlers; the right to hunt and fish on land not required for settlement; the provision of ammunition and twine; annuities; government grants of stock, seed, and implements to get Indians started in agricultural activity; provisions for famine relief to tide the Indians over in periods of emergency; entitlement to education; and entitlement to medical treatment (Treaty and Aboriginal Rights Research, Indian Association of Alberta, undated; Taylor 1979). A better balance of a secure land and resource base, and developmental and support initiatives could hardly have been imagined in the contemporary late nineteenth century context.

While many reasons might be adduced to explain why these generally constructive provisions have borne such disappointing fruits, cultural factors would surely form a major part of the account. At the risk of oversimplification it may be said that the settlement and development of the West proceeded on the basis of the private ownership of land and associated private enterprise and private capital formation. These foundations of non-Indian development stand in direct contrast with the Indian attitude to land as a nonappropriable community resource, traditions emphasizing the claims of kinship and protecting community cohesion by only qualified acceptance of individual advancement, and inexperience with capital formation, private or otherwise. Such different perspectives on property rights, the role of the individual, and the place of capital have served to undermine the logical foundations of attempts to promote Indian economic development based on essentially non-Indian presuppositions and institutions. The understandable silence of the Treaties on such matters has perhaps led to a rather superficial and mechanical approach to the complex development problems that they attempted to address. It is not surprising, therefore, that their developmental thrust has proved comparatively barren, while the support side, with a grim consistency and over a period during which such programs have increased universally, has come to assume an importance that was never intended. Given that federal budgets for Indian matters have necessarily been limited (not to mention of low priority), support and its associated dependency and paternalism have in practice come to overshadow development to such an extent that spending on the latter recently accounted for a mere 5% of federal spending on status Indians in Alberta (DIAND 1983:30).

Indians implicitly recognize the problem described above by emphasizing the "spirit" of the Treaties, and the need to see economic development as requiring on-going commitment from the Federal Government. Their recognition of the problem, however, tends to bring them to a dilemma. This is because they, perhaps more than any other group in a country experiencing persistent general unemployment and regional problems, have reason to doubt the capacity of the Federal Government to provide economic development. Without in any way abandoning their Treaties, Indians have cautiously moved to a realization that, while there may be no one sufficient condition for their economic development, greater control over their own affairs is probably a necessary one. Some Indian bands are now gradually assuming greater responsibility for administering social and economic programs and there is substantial Indian and all-party support at the federal level for further measures that would gradually constitute self-government (Penner Committee 1983). It should be emphasized that the self-government that has attracted support both within and beyond Indian communities does not involve the creation of an Indian bureaucracy to replace the present Federal bureaucracy, but rather the development and exercise of greater powers and responsibilities at the band level. Developments of this kind, involving devolution rather than centralization, would accord with Indian traditions of

local autonomy. Although such self-government need not imply the negative connotations associated with the present system of federal responsibility and Indian dependency, it may involve perpetuation of a degree of collectivism at the band level that is not conducive to the emergence of individual initiative, independence and commercial orientation, these being among the most important characteristics needed to promote economic development. We revert to this question in the conclusion of the paper.

But although the overall picture of poor economic and social conditions is undoubtedly valid as a generalization, it would be misleading to imply that these difficulties are experienced to an equal degree throughout all of Alberta's Indian reserve communities. On the contrary, reasonable expectations and general observation both suggest that some of these communities have probably fared better than the average and others worse.

2.0 DESCRIPTIVE PROFILE OF INCOME AND WEALTH OF A SAMPLE OF THE RESERVES

2.1 PERSONAL INCOME PER CAPITA

The Census of Canada reports sufficient data on 26 on the Alberta Indian reserves to permit estimates of income and other differences among them. These reserves are (in alphabetical order together with DIAND identification numbers) Alexander 134, Alexis 133, Blackfoot 146, Blood 148, Drift Pile River 150, Ermineskin 138, Fox Lake 162, Hay Lake 209, John D'Or Prairie 305, Kehwein 123, Louis Bull 138B, Montana 139, O'Chiese 203, Pigeon Lake 138A, Saddle Lake 125, Samson 137, Sarcee 145, Stony Plain 135, Sturgeon Lake 154, Sucker Creek 150, Unipouheos 121, Upper Hay River 212, Utikoomak Lake 155, Wabanum 133A, Wabasca 166A, and Whitefish Lake 128. The Census data make possible calculations of the total personal income of each reserve. Dividing this by the total population yields average personal income for each reserve. This figure, usually regarded as the best single indicator of the standard of living, has been calculated for each reserve. Index numbers for the highest and lowest ranking reserves are set out in Column 1 of Table 1, each figure being a percentage of the mean (i.e., total income of the reserves divided by their total population). It will be seen that there are quite substantial differences within the sample of reserves.

Table 1. Range between Highest and Lowest Reserve by Five Criteria.

	Reserve Personal Income per Capita 1980 (% of Mean)	Reserve Market Income per Capita 1980 (% of Mean)	Transfer Dependency Ratio 1980 (%)	Average Band Funds 1980/81 (% of Mean)	Average Oil, Gas and Mineral Revenues 1980/81 (% of Mean)
Highest Reserve	234	273	74	515	357
Lowest Reserve	44	48	3	0.8	0.0

2.2 MARKET INCOME PER CAPITA

The personal incomes referred to above originate partly from the ordinary remuneration of factors of production in their employments, and partly from a number of transfer payments from governments to individuals. Employment incomes reported by the Census arise from a variety of sources, especially wages and salaries, rents to individuals from leasing their lands, and incomes from farms and businesses. These employment incomes can be collectively regarded as arising from market activities. The average market income of the highest and lowest ranking reserves (calculated in the same way as for personal incomes) is set out in index number form in Column 2 of Table 1. Substantial differences among the reserves are again apparent.

2.3 TRANSFER INCOME

Subtracting total market income from total personal income yields an estimate of the total transfer income for each reserve. Transfer income comprises the usual federal benefits available to all qualified Canadians, such as unemployment assistance, family allowances and Canada Pension payments. It also comprises special payments to status Indians arising from particular federal responsibilities towards them. And it includes substantial disbursements to their members (known as per capita distributions) by governments of bands with oil, gas and mineral revenues. Expressing this total transfer income as a percentage of total personal income provides a transfer dependency ratio for each reserve. The percentages constituting these transfer dependency ratios for the highest and lowest ranking reserves are shown in Column 3 of Table 1. Again there are substantial variations among the reserves. For the sample of reserves as a whole the overall transfer dependency ratio was 29%. Because the least advanced reserves are probably somewhat underrepresented in the sample, this overall transfer dependency ratio of 29% almost certainly understates the true extent of transfer dependency for the entire population of Alberta reserves.

One further general comment should also be made about the overall transfer dependency ratio of 29% for the sample of reserves as a whole. As the corresponding figure for Canada was about 13%, there is little doubt that the average resident of the sample of reserves was more than twice as dependent on transfers as the average Canadian. In fact, the 29% transfer dependency ratio for the sample of reserves was virtually the same as the 28% for Newfoundland which was by far the poorest and most transfer dependent of all the provinces. But while it would be appropriate to regard the transfer dependency ratio for Newfoundland as indicative of the relative scale of support afforded by Canada to that province, no equivalent conclusion can be drawn from the corresponding ratio for the sample of reserves. This is because a large part of the transfers in the case of the reserves is from governments of resource rich bands to their own members. The amount of such band government transfers would have to be excluded from total transfers before any inferences as to external support could be drawn from a comparison of the transfer dependency ratios of the reserves and any province such as Newfoundland. But even in their unadjusted form, however, the high transfer dependency ratios for the sample of reserves and Newfoundland do suggest the rather limited extent to which their respective incomes are sustained by market activities. Indeed, because some of the market incomes in both cases are in practice derived from makework activities generated by external financing, these transfer dependency ratios, high as they are, probably understate the true extent of dependency in both cases.

In concluding this brief profile of reserve incomes, it is important to point out that the incomes that have been discussed are conventional money incomes. For Canadian

society generally such money incomes are probably the best summary figures available to indicate the level of economic wellbeing and its sources. But Indians living on reserves and still adhering in varying degrees to traditional lifestyles are not entirely comparable to the general Canadian population. The traditional lifestyle to some extent diverts effort away from pursuits that generate income in the conventional sense, and into pursuits that generate income in the nonconventional sense of income in kind such as the meat derived from hunting. Thus, reported data on conventional money incomes of reserve residents probably understate their real incomes to the extent that they exclude the real income benefits of traditional activities (Brody 1981: 190-213). Such differences between real incomes and conventional money incomes arising from their respective lifestyles tend to weaken income comparisons between Indian groups and the rest of Canadian society. Although such lifestyle differences are probably of less importance when making comparisons within a group of reserves, they are not entirely negligible even in this context.

2.4 WEALTH

Even disregarding the ambiguity of the term "wealth" arising from cultural differences, suitable data are not available to permit proper estimates of the wealth of reserves. Nevertheless, two types of data have been collected that would form parts of a more complete account. The first is data on band funds. Band funds are held in two accounts - capital and revenue. Major transactions such as the sale of land and nonrenewable resources are reflected in the capital accounts, the interest on which flows into the revenue accounts. Also included in the revenue accounts are rents from the lease of band-owned agricultural land, revenues from band-owned businesses, and income from band investments. The average total funds per band member in the combined capital and revenue accounts of each band show the approximate overall financial health of each band. These average band funds for the highest and lowest ranking reserves are set out in index number form (as a percentage of the mean) in Column 4 of Table 1. It is clear that there are not merely substantial but actually quite vast differences among the reserves comprising the sample. Although it would require research going beyond the scope of this report to identify all the sources of these differences, it must be expected that the presence or absence of resource revenues will inevitably be a substantial part of the explanation.

Data on annual total oil and gas revenues of Canadian Indian bands are set in Table 2 for the decade terminating at the 1981 Census year. The sharp and continuing increases after 1973/74, when the energy boom got under way in Alberta, are very much what would be expected.

Table 2. Annual Oil and Gas Revenues of Canadian Indian Bands (\$M).

1971 -72	1972 -73	1973 -74	1974 -75	1975 -76	1976 -77	1977 -78	1978 -79	1979 -80	1980 -81
\$4.2	\$5.3	\$9.0	\$34.8	\$42.5	\$57.0	\$73.6	\$95.6	\$154.4	\$183.0

Source: Consultant's Report to DIAND (1983).

Almost all the revenues listed in Table 2 in fact accrued to Alberta bands, and within that Alberta total to a fortunate minority. Approximate data have been collected from a variety of sources on average oil, gas and mineral revenues for the bands whose reserves comprise our sample. These data for the highest and lowest ranking reserves are set out in index number form (as percentage of the mean) in Column 5 of Table 1. The extreme range between the "haves" and (literally) "have nots" is quite clear.

It is possible to quantify the relationship between the overall financial position of the reserves as indicated by the average band funds and the undoubted major contributor to that position, the average level of oil, gas and mineral revenues. Using the complete set of absolute data underlying Columns 4 and 5 of Table 1, the relationship between average band funds in 1981 (BF) and the corresponding level of average resource revenues (RR) was estimated using ordinary least squares to be:

$$BF = -758 + 1.6 RR \quad (\text{Equation 1})$$

(-.87) (19.2) (t statistics in brackets in all equations)

$$R^2 = .94; DW = 2.19; F = 367; SE = 3607; N = 26$$

As variables reflecting other potential influences on band funds are not included in Equation 1, it is not possible to conclude categorically that the financial position of a reserve is determined almost exclusively by its resource revenues. Nevertheless the betting would have to be heavily on that as a realistic summary statement.

2.5 INTER-RESERVE INEQUALITIES: OVERVIEW AND AN INTER-PROVINCE PERSPECTIVE

The inequalities among the reserves with regard to market incomes, personal incomes and transfer dependency ratios may be summarized and set in the context of corresponding differences among Canadian provinces. Perhaps the most common way of summarizing and comparing the degree of inequality within and between samples is by calculating their coefficients of variation. The coefficient of variation is useful for comparative purposes because it standardizes variations on their respective means. The coefficient can take any value between zero (indicating complete equality) and one (indicating the highest degree of inequality). The coefficients of variation have been calculated for market income and personal income indexes and transfer dependency ratios for both the reserves and the provinces. They are set out in Table 3.

Table 3. Coefficients of Variation for Inter-Reserve and Inter-Province, Per Capita Income Indexes and Transfer Dependency Ratios (1980).

Inter-Reserve			Inter-Province		
Market Incomes	Personal Incomes Ratios	Transfer Dependency	Market Incomes	Personal Incomes Ratios	Transfer Dependency
0.46	0.46	0.47	0.25	0.20	0.36

Source: The coefficients for the reserves are calculated from the complete data set underlying Columns 1-3 of Table 1. The coefficients for the provinces are calculated from Statistics Canada CANSIM data used in Robert L. Mansell and Lawrence Copithorne, "Canadian Regional Economic Disparities: A Survey". Prepared for the Royal Commission on the Economic Union and Development Prospects for Canada, 1985.

The data in Table 3 suggest three main conclusions:

1. Per capita market income differences among the provinces are considerably greater than the corresponding differences in personal incomes. The respective coefficients of variation for the former (0.25) and the latter (0.20) indicate a narrowing of inter-province differences that reflects the equalizing and redistributive aspects of various Federal programs.
2. Making the same comparison of market incomes with personal incomes for the reserves, however, leads to a very different conclusion. The coefficient of variation for per capita market incomes (0.46) is actually the same as that for personal incomes. The effect of transfers in this case has been to leave the existing degree of inequality (not, of course, actual incomes) unchanged. This result has probably come about for the following reasons *inter alia*. a) Whereas the political realities of Confederation provide a strong motivation for policies that effect some measure of equalization and redistribution among the provinces, there is no real counterpart of this motivation either among Indian bands themselves or in Federal Indian policy. This is not to imply that either Indian organizations or DIAND are completely indifferent to questions of inequalities. It is merely to suggest that a wide variety of other issues collectively dominate their respective agendas. b) The fiscal mechanisms and economic programs that implement equalization and redistribution among the provinces again have only limited counterparts in the context of Indian bands and the Federal Government. The resource revenues that allow various bands to make transfer payments to their own members are entirely band-specific. The legal foundation for appropriating any part of these revenues for redistribution to other bands does not exist. All that can be done, and is done to some degree, is to place the emphasis in DIAND discretionary funding on the poorest of the bands.
3. The inequalities among the reserves far surpass those among the provinces. Whether the comparison is made for market incomes, personal incomes or transfer dependency ratios, the coefficients of variation for the reserves are much greater than those for the provinces (0.46 vs 0.25 for market incomes, 0.46 vs 0.20 for personal incomes and 0.47 vs 0.36 for transfer dependency ratios respectively). While it would be possible to raise some objections to these specific data on the comparative extent of inter-reserve and inter-province inequalities, their general implication clearly raises an important question. If the comparatively small degree of inequality among the provinces has required a major policy response in the form of equalization and redistribution, does not the greater inequality among Indian reserve communities also need to be specifically addressed? And, if so, by whom?

3.0 CAUSAL FACTORS UNDERLYING INCOME DIFFERENCES

In this part of the paper we change the focus of attention from the average incomes of all reserve residents to the average incomes of persons who actually received such incomes. We maintain the distinction between market incomes (those arising from the employment of factors of production) and personal incomes generally (those including both market incomes and transfer incomes).

3.1 MARKET INCOMES

An analysis of the factors that may be important in explaining differences in average market incomes among the reserves should primarily derive its rationale from general theoretical considerations supplemented with due regard to the limitations of available data. The average market incomes of the reserves as reported by the Census relate to the entire calendar year 1980. One potentially important cause of differences among such incomes might be variations in the number of weeks actually worked in the year. Allowing for such variations it may then be hypothesized that annual average market incomes will tend to vary directly with the factors that endow labour with greater productivity. One such factor would be the average quantity of land available to members of the labour force. Another would be the extent to which the human capital of the reserve labour force has been developed by education. This would naturally lead to an expectation that the proportionate availability of other forms of capital should also be of importance. Unfortunately it has not proved possible to acquire or develop a series that would adequately represent this potentially important variable as adequately as one would wish.

In addition to the factors mentioned above one other influence of a social character may also be considered as potentially likely to affect average market incomes. This is the gender of the income recipient.

There are two reasons for considering the gender of the incomes recipient as a possible influence on average market incomes on a reserve. One is the substantial amount of evidence suggesting that in the Canadian economy as a whole marked differences exist between male and female earnings. One recent estimate (Economic Council of Canada 1983:88) indicates that, allowing for differences in hours worked, women's earnings in 1980 averaged about 74% of men's in the lowest paid occupations and 65% in the highest. Data on a wide variety of occupations in Alberta (Alberta Bureau of Statistics 1984) confirm the existence of differences at the provincial level. It would therefore be reasonable to expect that gender-related earning differences might also appear within reserve communities.

It would be tempting to argue that there is also a second and rather special reason for believing that such differences may exist on the reserves -- the fact that Indian women had a long history of being unequal before the law. Before the amendment of the Indian Act in 1985, a status Indian woman lost her status when marrying a nonstatus man whereas the reverse was not the case. On the contrary, a status Indian man conferred Indian status upon a nonstatus spouse at marriage.

It does not seem possible, however, to hypothesize any very strong direct casual connection between the discriminatory sections of the Indian Act and lower earnings for female residents of the reserves. This is because the females who were most adversely affected by the Act generally left the reserves and would not therefore appear in our sample data on reserve residents.

It might be somewhat more plausible, however, to suggest that the discrimination in the Indian Act merely represented "a legislative embodiment of customary social and economic patterns" (Jamieson 1978:84) already existing within Indian communities. This view had been advanced by the Crown in the joint Lavell and Bedard case of 1973 when the Supreme Court of Canada upheld the discriminatory provisions of the Act as lawful at that time. Without necessarily accepting that position in its entirety, it is probable that some aspects of the division of labour in Indian communities have worked to concentrate women into less well paid occupations such as craftwork, with the expectation being that men would normally occupy posts in band management, which tend to be among the better paid. In other words customary aspects of reserve labour markets, involving some measure of occupational segregation, rather than the Indian Act as such, might have tended to produce differences between male and female earnings on the reserves. And in so far as an Indian woman would normally move to her husband's reserve on marriage, even to the extent of being "transferred to the band of her husband regardless of her wishes" (Jamieson 1978:8) such women could reasonably be expected to experience some transitional costs before becoming established in the labour market of their new reserves. This again would tend to create some expectation of women achieving relatively lower earnings than men. These factors are, of course, over and above those of child bearing and rearing that impact significantly upon female prospects in labour markets for both Indian and non-Indian women. On balance, therefore, it would appear that there is at least as much chance of gender being a determinant of earnings on reserves as it is elsewhere.

The dependent and potentially relevant explanatory variables described above are listed below together with some specific commentary on each one.

- MY (average market income): This is the data on annual 1980 average employment income of persons receiving such incomes. It is reported for males and females separately for each reserve.
- WW (average weeks worked): Given that differences in the numbers of weeks worked in calendar 1980 might have influenced the level of annual market incomes, it was necessary to devise a series that would take such variations into account by acting as a control variable. Statistics Canada provided further data that permitted the construction of an appropriate series. Data were made available showing for each reserve the number of weeks worked by relevant numbers of males and females separately. The data were reported under several categories such as "40-48 weeks", and each category divided into the subcategories "mostly full time" and "mostly part time". For estimation purposes the subcategory "mostly part time" was regarded as equivalent to one half of the corresponding "mostly full time" figure. All the subcategories were combined so as to form an estimate of the weighted average number of weeks worked for each reserve, the weights being the numbers of persons in each subcategory. These estimates were made for both males and females.
- ACRES (average acres): Data on reserve acreages were made available by the Alberta Indian Agricultural Development Corporation. The acreage of a reserve has been divided by its total labour force as recorded in the Census to provide an estimate of how much land is at the disposal of each worker. It is not possible to attribute ACRES to males and females separately on any given reserve. The average acreage for a given reserve has been attributed equally to males and females for that reserve. Variations in average acreages thus relate to the differences among the twenty-six reserves.

- ED (average number of years of education): Statistics Canada has provided the author with data on the highest level of education of members of the labour force of each reserve, the data being reported separately for males and females. The data are reported under several categories such as "less than grade 9". The approximate average number of years of education implied by each of these categories was estimated, and the several averages combined so as to form an estimate of the weighted average level of education of members of the labour force for each reserve, the weights being the numbers of persons in each category. These estimates were made for both males and females.
- D (dummy variable): The purpose of this variable is to show whether the gender of a market income recipient is relevant to determining the level of that person's income. It takes the value of 0 if the observation is a female market income or 1 if the observation is a male market income.

As the twenty-six reserves provide data on average employment incomes for males and females separately they can be regarded as a cross section sample comprising fifty-two observations. The dependent variable (average market income) was regressed on the four independent variables to estimate the degree to which variations in the former might be explained by variations in the latter. The result was as follows:

$$MY = 6721 + 187.4 WW + 7.3 ACRES + 604 ED + 3849.2 D \quad (\text{Equation 2})$$

(-2.7) (3.7) (2.3) (2.7) (4.7)

$$R^2 = 0.51; DW = 2.3; F = 14.4; SE = 2764; N = 52$$

Equation 2 explains 51% of inter-reserve variations in average market incomes and the signs and significance levels of the coefficients of the four independent variables mutually reinforce the inference of their respective positive impacts. While it would be inappropriate to attach undue importance to the exact values of the coefficients, a few comments on them are given for illustrative purposes.

The positive sign, significance and value of the coefficient for WW seem fairly reasonable, and retrospectively can be considered as probably validating the manner in which WW was derived, especially the necessarily rather arbitrary equation of "mostly part time" to one half of "mostly full time" workers. The coefficient for WW suggests, holding the other variables constant, that recipients of market incomes could earn on the average about \$187 for each additional week worked per year. This would be about 40% above the Alberta minimum wage applying during the relevant period. The coefficient also confirms the importance of working for a reasonable number of weeks in the year and thereby undermines any belief there may be that short bursts of employment activity can ever be a substitute for steady work. This latter point is far from being trivial truism in the context of labour on Indian reserves. While it obviously underlines the considerable importance of employment opportunities, it can also be interpreted as implicitly raising some doubts about the compatibility of traditional work patterns (minimal activity alternating with periods of more intense activity) with higher levels of market incomes under modern conditions.

The apparently significant role of average land endowment in increasing employment incomes should be interpreted as indicative of the importance of land in general for a reserve economy. Agricultural land farmed and leased (in both cases by both individuals and the band itself), forest resources, gravel, fishing and property development are all related closely to the land base.

The sign and the coefficient estimated for ED indicate that each additional year of education adds about \$604 to average employment income, holding the other variables constant.

The coefficient of the dummy variable D is very high and suggests that there are probably quite substantial differences in employment earnings as between males and females. Such a large differential inevitably raises the question of how much of it is caused by discrimination against women in reserve labour markets. As it stands our model does not contain a sufficiently comprehensive set of explanatory variables to permit the attribution of the entire earnings differential to discrimination. One recent important survey of gender discrimination in Canadian labour markets generally concluded that "approximately half of the overall earnings gap of 40 percent reflects discrimination..." (Macdonald 1985, Volume Two: 627). As our own model makes some allowance for productivity influences, discounting our results by the factor suggested by the Macdonald Commission would yield a likely minimum ratio for the net effect of gender discrimination on the reserves of about 23%. Such an estimate would be somewhat above that for Canadian society generally, but similar enough to suggest a basic similarity and plausibility.

3.2 PERSONAL INCOMES

It was mentioned above in Part 2 that resource revenues have been used to make per capita contributions to band members. It is useful to look more closely at just how great an impact on personal incomes is attributable to these particular transfer payments. Taking average personal income per adult male or female recipient (PY) as reported in the Census, and regressing this on the corresponding level of market income (MY), average resource revenues (RR) and a dummy variable (D) to distinguish between males and females, the following regression is obtained:

$$PY = 1256.35 + .644 MY + .107 RR + 1181.75 D \quad (\text{Equation 3})$$

(2.2) (9.0) (3.5) (2.1)

$$R^2 = 0.74; DW = 2.17; F = 48.7; SE = 1822; N = 52$$

The implication of the positive and significant coefficient for RR is that each additional dollar of average resource revenues tends to add about 11 cents to the annual income of each income recipient. Comparing one of the reserves enjoying the highest level of average resource revenues with another reserve having no resource revenues at all, this would imply that annual incomes of income recipients on the former reserve would be about \$2370 greater than those on the latter. The coefficient for the dummy variable (D) indicates that comparing male and female incomes there is again a significant difference to the benefit of males of about \$1182. Findings of this kind, considered together with the earlier results suggesting the much lower relative market incomes of women, would be quite consistent with the view (Research Branch, Indian and Inuit Affairs Program 1979:31) that "Indian women likely rank among the most disadvantaged in society."

3.3 HOUSING QUALITY

Although the quality of housing available to members of a community is not "income" in the usual sense of the word, housing conditions are widely regarded as among the most important factors determining the general quality of life. They enter into studies of community wellbeing as one of the "social measures" of relative levels of prosperity

(Economic Council of Canada 1977:58). Although housing quality is multidimensional, there is one aspect of it that probably summarizes its potential for affecting social wellbeing at least as well as any other. That aspect is the extent of crowding, with the average number of persons per room (PERSRM) being regarded as an appropriate measure of crowding. The emergence of major resource revenues could reasonably be expected to have had an impact on housing conditions in the community. This could come about indirectly through the substantially increased incomes accruing to members of the community, and/or more directly (and in the Indian context more likely) through particular projects geared to providing improved housing. Taking the measure of crowding as the dependent variable, and allowing for differences in the average number of persons per household (NOSPH), it is instructive to look at the effects of variations in the level of average resource revenues (RR) as used previously. The relationship is revealed in the following semilog model of the conditions existing in the twenty-six reserves.

$$\log \text{PERSRM} = -1.518 + 0.295 \text{ NOSPH} - 0.0000143 \text{ RR} \quad (\text{Equation 4})$$

(-6.81) (7.5) (-3.58)

$$R^2 = .75; \text{ DW} = 1.91; \text{ F} = 38.3; \text{ SE} = 0.172; \text{ N} = 26$$

The negative sign of the coefficient for RR implies as would be expected that, as resource revenues go up, crowding in housing goes down, i.e., housing conditions improve. The significance and magnitude of the coefficient suggest, bearing in mind the potentially absolutely large values of RR, that the effect is actually quite a noticeable one. To take the extreme case again as we did in interpreting Equation 3, if we compare a reserve with no resource revenue with another having the highest level in the sample, then the slope coefficient for RR suggests that housing conditions in the latter as measured by reduced crowding would be about 32% better. The conclusion that resource revenues have been instrumental in bringing about marked improvements in housing conditions seems reasonably justified. It is supported by evidence of examples contained in a recent consultant's report to DIAND (Dion Resource Consulting Services 1984:14).

4.0 CONCLUSIONS

At this stage it is useful to stand back from the analytical details of the preceding sections and discuss several more general matters that relate to the economic development of the reserves.

4.1 THE AWKWARD CONSEQUENCES OF "LANDS RESERVED FOR INDIANS"

Perhaps the first thing that strikes an outside observer of the reserve system is that its legal distinctness has implied an unusual and possibly quite important hidden price. That price is the weakening of several forces that, in the wider community, economic progress comes about to the achievement of economic progress. In that wider community, economic progress comes about primarily as a result of individuals and businesses perceiving and responding to market pressures and opportunities. Government plays a major role in matters not well adapted to market solutions, and a smaller and probably less successful role in matters where market solutions could apply. But a reserve is different in a number of ways. Let us mention only three by way of illustration.

Firstly, the legal foundation of the reserve presents substantial impediments to the free movement of capital and labour into the reserve economy. Skilled and specialized

human resources (other than band members) cannot move into a reserve to take advantage of whatever opportunities exist there. The free movement of capital is severely curtailed at the boundary of the reserve and its entry is deterred by the inability of creditors to seize (and therefore accept as security) fixed assets located on reserves. In practice these barriers to inward factor mobility can be to some extent overcome for a limited range of moveable assets such as farm machinery but only by cumbersome measures involving DIAND and the Band Council. As the normal processes and terms for raising capital are difficult to apply to reserves, alternative but far from satisfactory mechanisms have been developed. These have involved DIAND in extremely controversial loan and grant operations in the Indian Economic Development Account that have drawn unfavourable comment from the Auditor General of Canada (Auditor General 1980:188).

Secondly, the increased role for governments implied by the foregoing often means that business activities on reserves are built on foundations of substantial government or intergovernment presence - the very foundation that outside the reserve is associated with problems rather than successes. This can also lead to an intrusion of purely political disturbances into business planning and operations much as would be the case if outside businesses typically conducted their activities through city hall.

Thirdly, a reserve economy is a very small economic unit. Even the largest in our sample had a population only equivalent to that of a very small town. A reserve cannot therefore be expected to generate a reasonable standard of living entirely as a result of trade conducted only among its own members. Its expectations for economic advancement, like those of any other Alberta community of similar size, must be based upon a pattern of substantial specialization and trade with the wider community around and beyond it. To perceive and respond to the opportunities that exist in the wider community is always difficult, but it is doubly difficult for Indians living on reserves who, by reason of geographical separation and cultural distinctness, are that much less attuned to the market realities that condition economic viability for Indians and non-Indians alike. Thus, if reserve communities are to avoid the negative economic consequences of outsider status and a mainly reactive posture, they need to ensure that their members, especially their leaders, can effectively bridge the gulf between Indian and non-Indian communities. To do this they need to be effectively bicultural; i.e., able to operate as comfortably and effectively as any other Canadians in dealing with business and government while remaining equally aware of their own particular Indian circumstances. Education is the critical factor in ensuring the realization of this objective.

4.2 EDUCATION: THE IMPORTANCE OF HUMAN CAPITAL DEVELOPMENT

Although it would be wrong to assess the contribution of education to human welfare purely from an economic perspective, that particular perspective must be considered as having substantial practical importance. Our results in Equation 2 confirm that higher levels of education on reserves have been associated with relatively higher average market incomes. As improvements in the delivery of educational programs are clearly potential policy variables, this finding is no less important for being entirely predictable. For Indians in Alberta education must be regarded as a fundamental condition of economic progress affecting every facet of economic life from the ability of a farmer to comprehend the directions on a can of herbicide to the capacity of band governments to negotiate with major resource companies and deal effectively with Federal and Provincial Governments in matters affecting their vital social and economic interests. It is naive to believe that outside consultants, lawyers and DIAND can fully or even adequately constitute substitutes for expertise that is lacking in the community itself. And as the proportion of Alberta's status Indians living off reserves is expected to increase (Siggnier and Locatelli 1980:13) education will play an equally critical role in determining whether

Indian migrants can be successfully integrated into urban employment. Thus for both the development of Indian reserve communities and the advancement of Indians as individuals it would be difficult to exaggerate the importance of education.

For this reason it is particularly discouraging to learn that the positive benefits to be derived by Indians from education seem to have been achieved almost in spite of rather than because of the education system itself. Although examples of very creditable institutional efforts and achievements can be found, the weight of the evidence over a long period suggests that "the general state of Native education in Alberta is deplorable" (Committee on Tolerance and Understanding 1984:116).

The factors that have combined to produce this state of affairs are deep rooted and complex. For a long time education for Indians was based upon implicit or even explicit premises that tended either to disavow or to disregard Indian religion, culture, and history. Far from building upon existing historical and cultural foundation of Indian societies, education became in part an assault upon them.¹ As education came to embody the cutting edge of cultural imperialism it has not surprisingly often been accorded only an indifferent reception by persons whose perception of its value has been obscured by bitter experiences.

If the "cultural vasectomy" inherent in much of the historical approach to Indian education is avoided in the future, it is equally important (knowing the penchant of education for fads) to avoid a tendency to build on any other extreme foundations. A recent United Nations Report on the World Social Situation, discussing the cultural relevance of education in developing countries, emphasizes the importance of a middle-of-the-road approach that could equally well apply in the context of Alberta Indian reserves:

"Education needs to ensure both the transmission of what is living in the cultural heritage, and the nurturing of innovative expectations and behaviours regarding development. If not, the efforts may instead lead to the reproduction of obsolete cultural traditions and values that might affect unfavourably creativity and the general intellectual development of young people" (United Nations 1985:66).

It would be out of place in a discussion of this kind to attempt to suggest specific ways in which Indian education in Alberta should be modified so as to enable its potential benefits to be more fully realized. But it is highly probable that quite important gains could be made through fairly straightforward reforms that involve increased cultural sensitivity and community involvement. One such reform should clearly involve improved teacher training as Alberta has "the least developed teacher preparation programs in Native studies in Western Canada" (Committee on Tolerance and Understanding 1984:138). The general impression is one of substantial resource availability (in this case latent human ability) currently remaining seriously underdeveloped. This situation is bad enough from an economic perspective but much worse in human terms. It is encouraging to note that, within a year of the publication of the above report, Alberta Education has released a Proposed Policy Statement on Native Education in Alberta, 1985 that constructively addresses a number of issues fundamental to improving native education in the Province. Time will reveal how strong is the commitment to progress in this area.

¹ The English poet (now poet laureate) Ted Hughes clearly perceived the link between poverty and cultural debilitation. His poem Gulkana transcends its particular Alaska context: "A scrapyard of boxy shacks / And supermarket refuse, dogs, wrecked pick-ups, / The Indian village ... was comatose on the stagnation toxins / Of a cultural vasectomy."

This study has drawn attention to a number of factors at the micro level (especially the roles of natural and human resources) that undoubtedly have important implications for incomes and economic development possibilities of reserve communities, and has touched by way of background on several others of an "institutional" character that are also relevant to the development process. It is useful to conclude now by bringing such institutional factors forward to the centre of the stage.

Economic development comes about as a result of combining factors of production to produce outputs whose values exceed their costs. The productive process can be visualized as: (a) search for and accurate perception of various opportunities, and decision among them to establish objectives; (b) assembling, organizing, motivating and monitoring and paying the various factor inputs; (c) marketing output; and (d) remunerating those who perform (a) through (c) successfully. Indian experience over a century has given them a powerful intuitive and practical understanding that the Federal Cabinet, a large bureaucracy (DIAND), and a legal morass (the Indian Act) are institutions that are at best mainly irrelevant to or at worst inconsistent with the effective organization of productive activities as itemized above. The appeal of self-government is so powerful precisely because it rejects the institutions that are clearly perceived as obstacles to economic development. But if Indians are right to reject one set of institutions, they cannot avoid the need to define an alternative set. It does not necessarily follow that any other particular set will necessarily be all that much better. There may well indeed prove to be considerable difficulty in reconciling collectivist traditions with the essentially managerial and entrepreneurial functions and independence of economic agents that will be needed for development purposes. This comment should not be interpreted as a veiled suggestion that the historical commitment to the community should be abruptly cast aside. It is rather to invite consideration of the contribution to community well being that could be made by the emergence of a successful business and managerial class. If this report stimulates constructive contributions to debate on questions of this kind it will have served a useful purpose.

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